DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

JAMAICA

KINGSTON WATER AND SANITATION PROJECT

(JA-0114)

LOAN PROPOSAL

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CONTENT

ANNEXES

APPENDICES

BASIC SOCIOECONOMIC DATA

The basic socioeconomic data for Jamaica is available on the Internet at the following address:

http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata

INFORMATION AVAILABLE IN THE FILES OF RE3

PREPARATION:

1. National Water Commission: Kingston Water and Sanitation Project Final Project Report
2. National Water Commission: Outsourcing of Meter Reading and Meter Installation
3. National Water Commission: Operations Review Executive Summary
4. National Water Commission: Tariff Study Water Supply System Station Equipment Inventory Summary Sheet
5. National Water Commission: Kingston Water and Sanitation Project of Profile II Report
6. National Water Commission: Technical Cooperation by the Government of Japan Proposal
7. National Water Commission: Review for Regional and District Operations. Proposals for Modernization Program
8. National Water Commission: Operations Review Final Report
9. Kingston Metropolitan Area Water Supply Project. Institutional Strengthening Component for the National Water Commission. Corporate Business Plan
10. National Water Commission: Act
11. Jamaica: Institutional and Organizational Appraisal of the National Water Commission
12. National Water Commission: Kingston Water and Sanitation Project Inception Report
13. Office of Utilities Regulation (OUR) Performance Report for the National Water Commission
14. Office of Utilities Regulation (OUR) Regulatory Framework for the National Water Commission
15. Pricewaterhousecooppers: National Water Commission of Jamaica Review of existing tariffs and design of new tariff level and structure
16. Rapid Assessment water and sanitation sector selected Caribbean countries
17. National Water Commission: Request for Proposal for Engineering Services for the Kingston Water and Sanitation Project.
18. Office of Utility Regulation (OUR): Performance Report for the National Water Commission
19. Drafting Instructions for Water and Sewerage Services Act
20. National Water Commission Performance Targets and Tariff Requirements

ABBREVIATIONS

AM	Asset Management
BOT	Built, Operate and Transfer
CAS	Customer Accounting System
CECL	Carib Engineering Ltd.
CEO	Chief Executive Officer
CPVP	Corporate Planning Vice Presidency
DMA	District Metered Areas
EBITDA	Earning Before Interest, Taxes and Depreciation Amortization
EIA	Environmental Impact Assessment
GOJ	Government of Jamaica
IFF	Intermediate Financing Facility (IFF)
JBIC	Japan Bank for International Cooperation
JPSC	Jamaica Public Service Company
KMA	Water Sector in Kingston Metropolitan Area
KSA	Kingston and Urban Saint Andrew
LRAIC	Long Run Average Incremental Cost
MH	Ministry of Health
MIF	Multilateral Investment Fund
MIS	Management Information System
MLE	Ministry of Land and Environment
MLG	Ministry of Local Government
MOWH	Ministry of Water and Housing
NEPA	National Environmental and Planning Agency
NIC	National Irrigation Commission
NRCA	Natural Resources Conservation Authority
NWC	National Water Commission
O&M	Operation and Maintenance
OC	Ordinary Capital
OUR	Office of Utilities Regulation
PAM	Price Adjustment Mechanism
PATH	Program for Advancement in Health and Education
PCF	Private Consulting Firms
PIU	Project Implementation Unit

PPF	Project Preparation Facility
PSP	Private Sector Participation
PWC	Pricewaterhousecoopers
TC	Technical Cooperation
TCMD	Thousand Cubic Meters per Day
UDC	Urban Development Corporation
UFW	Unaccounted for Water
UWA	Underground Water Authority
WRA	Water Resources Authority
WSSA	Water and Sewerage Service Act
WTP	Wastewater Treatment Plant

INTERAMERICAN DEVELOPMENT BANK
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JAMAICA

IDB LOANS
APPROVED AS OF APRIL 30, 2004

	US$Thousand	Percent
TOTAL APPROVED	**1,766,663**	
DISBURSED	1,540,069	87.17 %
UNDISBURSED BALANCE	226,594	12.82 %
CANCELATIONS	65,105	3.68 %
PRINCIPAL COLLECTED	844,698	47.81 %
APPROVED BY FUND		
ORDINARY CAPITAL	1,402,812	79.40 %
FUND FOR SPECIAL OPERATIONS	164,918	9.33 %
OTHER FUNDS	198,933	11.26 %
OUSTANDING DEBT BALANCE	**695,371**	
ORDINARY CAPITAL	638,621	91.83 %
FUND FOR SPECIAL OPERATIONS	56,751	8.16 %
OTHER FUNDS	0	0.00 %
APPROVED BY SECTOR		
AGRICULTURE AND FISHERY	165,770	9.38 %
INDUSTRY, TOURISM, SCIENCE AND TECHNOLOGY	228,998	12.96 %
ENERGY	185,113	10.47 %
TRANSPORTATION AND COMMUNICATIONS	211,962	11.99 %
EDUCATION	113,042	6.39 %
HEALTH AND SANITATION	115,693	6.54 %
ENVIRONMENT	11,830	0.66 %
URBAN DEVELOPMENT	134,503	7.61 %
SOCIAL INVESTMENT AND MICROENTERPRISE	86,012	4.86 %
REFORM AND PUBLIC SECTOR MODERNIZATION	240,602	13.61 %
EXPORT FINANCING	260,499	14.74 %
PREINVESTMENT AND OTHER	12,639	0.71 %

* Net of cancellations with monetary adjustments and export financing loan collections.

Inter-American Development Bank
Regional Operations Support Office
Operational Information Unit

Jamaica

Tentative Lending Program

2004

Project Number	Project Name	IDB US$ Millions	Status
JA0114	Kingston Metro Water Supply Rehabilitation	40.0	
JA0106	National Irrigation Development Program	16.8	
	Total - A : 2 Projects	**56.8**	
JA0112	South Coast Sustainable Development Prog	14.0	
	Total - B : 1 Projects	**14.0**	
	TOTAL 2004 : 3 Projects	**70.8**	

2005

Project Number	Project Name	IDB US$ Millions	Status
JA0119	Youth Development Program	15.0	
JA0121	Micro and Small Enterprise Development Program	3.0	
JA0125	Post-Secondary Education	16.0	
JA0129	Road Natural Disaster Prevention Program	20.0	
	Total - A : 4 Projects	**54.0**	
	TOTAL - 2005 : 4 Projects	**54.0**	
	Total Private Sector 2004 - 2005	**0.0**	
	Total Regular Program 2004 - 2005	**124.8**	

*** Private Sector Project**

INTERAMERICAN DEVELOPMENT BANK
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STATUS OF LOANS IN EXECUTION

AS OF APRIL 30, 2004

(Amount in US$ thousands)

APPROVAL PERIOD	NUMBER OF LOANS	AMOUNT APPROVED*	AMOUNT DISBURSED	% DISBURSED
REGULAR PROGRAM				
Before 1998	2	67,700	42,655	63.01 %
1998 - 1999	3	54,900	14,705	26.79 %
2000 - 2001	6	164,000	42,974	26.20 %
2002 - 2003	2	33,000	8,649	26.21 %
PRIVATE SECTOR				
2002 - 2003	1	30,000	23,000	76.67 %
TOTAL	14	$349,600	$131,983	37.75 %

* Net of cancellations. Excludes export financing loans.

KINGSTON WATER AND SANITATION PROJECT

(JA-0114)

EXECUTIVE SUMMARY

Borrower:	National Water Commission (NWC)	
Guarantor:	Government of Jamaica (GOJ)	
Executing agency:	National Water Commission (NWC)	
Amount and source:	IDB: (OC)	US$ 9.5 million
	IDB: (IFF)	US$30.5 million
	Local: (NWC)	US$14.7 million
	Total:	US$54.7 million
Financial terms and conditions:	Amortization Period:	25 years
	Grace Period:	5 years
	Disbursement Period:	5 years
	Currency:	Dollars of the United States from the Single Currency Facility

The interest rate, credit fee, and inspection and supervision fee mentioned in this document are established pursuant to document FN-568-3 Rev. and may be changed by the Board of Executive Directors, taking into account the available background information, as well as the respective Finance Department recommendation. In no case will the credit fee exceed 0.75%, or the inspection and supervision fee exceed 1% of the loan amount[1].

Interest rate:	Adjustable option/LIBOR-based option
Credit fee:	0.25%
Inspection and supervision:	0.0%

Objectives: The general objective is to contribute to the improvement of the quality of life of the Kingston population by improving the reliability of potable water supply and sanitations services. The specific objective is to improve the quality of the services provided

[1] With regard to the inspection and supervision fee, in no case will the charge exceed, in a given six-month period, the amount that would result from applying 1% to the loan amount, divided by the number of six-month periods included in the original disbursement period.

to the Kingston and Saint Andrew Area (KSA) and increase the efficiency and sustainability of NWC.

Description: The project has the following components:

1. Reorganization and modernization of NWC

The goal of this component is to have NWC operated and managed in an efficient and sustainable manner, and would finance the reorganization and modernization of NWC, in particular: (i) customer service, to include billing and collection, customer information system, including a public awareness program and the study to change the tariff structure, so that subsidies are targeted only to the fourth quartile of the population; (ii) capacity building and training, with the aim of not only improving technical skills but also to start a cultural change in NWC; (iii) customer education; (iv) strengthening the management information system, including compliance with regulator and reporting to the Bank and mid and final evaluations; (v) private sector participation, to include improving its model contracts for outsourcing services, both existing and new ones and studies to identify opportunities for private sector participation(PSP); and (vi) support for changes in the corporate structure. Concurrently, NWC is in the process of rationalizing its staff, which includes severance pays, retraining and counseling; part of this expenditure will be considered as local counterpart and be recognized as expenditures made.

2. Rehabilitation of the potable water supply for KSA

This component will help NWC to meet water demand for the medium term and has as major goal the reduction in the levels of unaccounted for water (UFW) by minimizing physical losses to an economically and technically acceptable level. This component, the largest of the project, includes: (i) rehabilitation and improvement of water production infrastructure; (ii) distribution network zoning; and (iii) leakage reduction through contracts with the private sector in which payment would be based on performance.

This component will rehabilitate: (i) existing water treatment plants to bring them to acceptable operating standards; (ii) pumping stations to minimize energy wastage and improve service reliability; and (iii) pipelines and service storage facilities to reduce leakages. Under this component bulk flow meters and micrometers will be installed to better determine base flow and distinguish leakage from commercial losses.

3. Sewerage and sewage treatment for KSA

This component has the goal of improving the sewage collection system and formulation of a plan to expand sewage collection and treatment system. It includes the rehabilitation of selected sewage pumping stations to avoid the overflowing of the system, which have very negative public health and environmental consequences. In addition this component will include the preparation of an action plan to develop a wastewater treatment plant at Soapberry.

Bank's country and sector strategy:

The proposed Program is consistent with the Bank's strategy for Jamaica in the Project areas of: Modernization of the Public Sector, as it aims to enhance efficiencies and effectiveness of a public company; and Private Sector Development through the participation of the private sector in the management of the water supply and wastewater collection, treatment and disposal in the KSA. By providing the residents of the KSA with good quality potable water with positive impacts in their health and quality of life, the Program has a positive social impact, which is consistent with the Bank social development strategy. Lastly, this program will support the necessary actions to plan for the expansion of the wastewater treatment and collection systems, and develop alternatives to address wastewater treatment issues. These activities are expected to generate environmental benefits.

Coordination with other development institutions

The Bank has been actively coordinating its activities with JBIC. During the preparation of this operation, the coordination has taken place specifically at the policy and project level. On the first level, JBIC agreed to work in Jamaica following the Bank's public utilities policy; as a result JBIC developed, parallel to its physical investment program —in Spanish Town and St. Catherine—, an institutional strengthening component program for NWC that aims at improving the commercial area of the Commission, and developing a business plan for the company, and consultancies to modernize the utility. JBIC conditioned the disbursement of one of its loan tranches to the OUR becoming the regulator of the water sector in the country (see ¶ 1.33-1.36).

Environmental/ social review:

The CESI, in its meeting of September 05, 2003 (CESI 32-03), requested the project team to perform an Environmental Analysis (EA) for the operation; this was carried out as requested. The project team reviewed the strategic implication of the operation as a catalyst for the clean up of the Kingston Harbour and extended the analysis to include the review of the alternatives for wastewater treatment and final disposal and considered an ocean outfall to be implemented in the future. CESI approved the project report and the EA in its session of March 19, 2004 (see ¶ 5.39-5.44).

The results of the EA indicate that the net environmental benefits of rehabilitation of the water and sewerage systems, and the sewage treatment proposals will be very significant in terms of general sanitation conditions, public health and visual amenity. The rehabilitation of the sewerage collection system is to proceed with the implementation of a Sewage Treatment Plant (STP) to treat the city's wastewater, which in turn will lead to improvements to the coastal marine environment, since a significant percentage of critical nutrients contributing to eutrophication and pollution of the Inner Harbour will be removed.

The project's budget includes US$250,000 to develop, calibrate and run the three dimensional hydrodynamic and dispersion model and US$100,000 to conduct the EIA for the STP system at Soapberry according to the prepared TORs and following the Bank's policies for Disclosure of Information (OP-102) and Resettlement (OP-710) and US$100,000 to implement the monitoring program. These actions will contribute to the environmental and social feasibility of the future project of the STP at Soapberry.

Benefits:

The expected results and benefits of the potable water rehabilitation project would be four fold, in line with the problems identified above: (i) the establishment of a sustainable national water company that depends less on GOJ transfers; (ii) the reduction of cost that will be at least one third of the energy cost used by NWC for the KSA system plus the cost of chemicals and maintenance of the pumps, saving scarce foreign exchange paid for oil imports required to produce energy in Jamaica; (iii) the reduction of water shortages, which in turn will increase the welfare of the users; and (iv) the additional water available which will delay the need for investments in new water supply systems.

Risks:

The project has risks, some of which were mitigated during project preparation, and others will be mitigated during project execution. These risks are at the political level, resulting from sector reform risks, private sector participation risks and tariff and subsidy implementation schedule related risks; risks at the corporate level are from institutional culture and implementation of NWC's modernization plan. Following is a summary of the specific risks and the main factors helping to mitigate them.

1. Water and Sanitation sector reform

There is always some risk of backtracking on policy reforms at the level of Parliament. However the Cabinet has already approved the instructions to the Chief Parliamentary Counsel for the new Water

and Sanitation Service Act (WSSA). The GOJ expects that the WSSA will be approved during calendar year 2004. This Act will consolidate the sector and NWC reforms and should prevent backtracking on the sector reforms by future governments.

2. Private Sector Participation (PSP)

PSP such as a build operate and transfer (BOT) for the Soapberry Treatment Plant (STP) or an integral concession of a particular geographical area of services, could encounter some resistance from within NWC and its customers. The plan financed by the project, therefore, will include not only the financial and technical viability of the project, but also consultations with stakeholder to determine the political will to carry out these projects with PSP.

3. Tariff structure

There is a risk that clients may react negatively to the new tariff increase and future changes of the tariff structure requested by the Bank. There are a number of factors to mitigate this risk. As part of the approval process of the tariff increase, NWC had to conduct a series of public meetings all over the country to inform and explain the situation. OUR approved the latest tariff increase based on the results of these meetings and the studies conducted. The change of tariff structure will follow a similar process.

4. Cultural challenges and implementation capacity

The implementation of the modernization plan entails, among other things, a change in the management culture of NWC so as to no longer conduct "business as usual". This is a long-term process in which the project will support the initial steps in most of these areas, as described in the project components. In April 2003, NWC's Board approved the modernization plan and jointly with the management is committed to its execution. However, NWC, as part of preparing the studies for the modernization, engaged both the upper and middle management and latter on the unions and the workers in discussions about the importance of the modernization of the Company and the required needs and challenges to change the corporate culture.

Special contractual clauses:

Prior to the first disbursement NWC will present evidence, to the satisfaction of the Bank, of:

a. An agreement between NWC and the GOJ whereby the GOJ will commit to transfer funds to NWC to cover debt payments for the subcomponents related to the following studies: (i) three dimensional hydrodynamic model for the Kingston Harbour, (ii) an action plan to develop a wastewater treatment plant at Soapberry; and (iii) the feasibility studies for the Soapberry

treatment plant or provide other arrangements for the development of the wastewater treatment plant for KSA (see ¶ 2.16).

b. The establishment of the steering committee for the project (see ¶ 3.4).

c. Establishment of the Project Implementation Unit (PIU), appointment of a Project Manager, key personnel and a staffing plan for the PIU (see ¶ 3.6).

d. The implementation of a sound accounting system and adequate mechanisms for internal control (see ¶ 3.21).

e. The parameters and data for the baseline, referred in table 3.2 and the logical framework, updated and approved by the Board of NWC, to measure the effectiveness and progress of the Project (see ¶ 3.26).

Other special conditions to be met by NWC, to the satisfaction of the Bank, during the execution of the project are:

a. Have an annual Operations and Maintenance plan in the first quarter of each year, during ten (10) years starting after the completion of the first work of the Project (see ¶ 3.12).

b. The mid-term review to authorize commitments above 60% of loan resources (see ¶ 3.16).

c. Satisfactory progress in the effective implementation of: (i) the tariff approved by OUR in December 2003 and (ii) the modernization plan (see ¶ 4.6 and ¶ 5.26).

d. Within two years of project execution, submit a new tariff study and request to OUR and provided OUR's approval, change in NWC's tariff structure to insure targeting subsidies only to the fourth quartile of the population.(see ¶ 5.22).

e. Have, not later than the third year of project execution, operating revenues sufficient to cover operation, maintenance, administrative expenses and depreciation throughout the execution of the loan or adopt appropriate measures to assure such coverage (see ¶ 5.31).

f. Have, not later than the third year of project execution, internal net cash generation sufficient to cover at least 20% of NWC's capital expenditure plan or adopt appropriate measures to assure such coverage (see ¶ 5.33).

Special conditions to be met by the GOJ, as Guarantor, to the satisfaction of the Bank, during the execution of the Project are:

a. Limit subsidy transfers to NWC to: (i) payments as specified in (a) of conditions prior to first disbursement, and (ii) special projects such as environmental (wastewater treatment plants) and social projects (communities in the fourth quartile of the Jamaican Poverty Map) (see ¶ 4.13).

b. Timely payment, on a quarterly basis, to NWC for water consumed at the standpipes (see ¶ 5.23).

Poverty-targeting and social equity classification: This operation qualifies as a social equity-enhancing project, as described in the indicative targets mandated by the Bank's Eighth Replenishment (Document AB-1704). Furthermore, this operation does not qualify as poverty targeted investment (PTI).

Exceptions to Bank policy: None.

Procurement: NWC will be responsible for procurement of goods and related services and contracting works in accordance with the Bank's rules and procedures stipulated in Annex B of the loan contract. International competitive bidding will be required for procurement of goods costing US$250,000 or more and works costing US$1.5 million or more. Consulting services will be contracted in conformity with the Bank's Policies and Procedures for the Procurement of Consulting services, contained in Document GN-2220-10, of February 2004 and international competitive bidding will be used for contracts over US$200,000. Bids below these thresholds will follow domestic legislation, which is compatible with Bank procedures. The Procurement Schedule (see Annex II) presents the estimated cost of the lots.

I. FRAME OF REFERENCE

A. Background of the water sector in Jamaica

1.1 The Jamaican population has limited access to safe water via a residential connection. On average, near 70% have service through a house connection, 12% via a nearby source, and the rest through other sources. Sanitation services exist in most urban areas, with over 92% coverage in the Kingston Metropolitan Area (house connections to sewerage systems and septic tanks and absorption pits, mainly), and 60% in other towns. Important differences exist between the urban and rural areas in both access to and quality of service.

1.2 In terms of quality the situation is rather homogeneous between rural and urban areas, but precarious. More than one-third of the population has services considered inadequate for reasons such as regularity of available water. Treatment of wastewater on the island is limited and is basically an urban amenity. The average Jamaican household spends 2.1% of its income to pay for water and sewerage services, while the poorest quintile spends 4%. Some communities have access to "social" water, which is supplied through standpipes or by trucking and is subsidized.

1.3 In 1997 widespread dissatisfaction with water services was apparent with some cases of civil unrest that was exacerbated by a severe drought throughout the country. As a result, the Government of Jamaica (GOJ) adopted a series of initiatives to solve the water sector problems, mainly: (i) a reorganization of the water sector institutions; (ii) new investments in water systems; and (iii) the definition and issuance of a water sector policy and strategy. The Bank supported the design of the policy.

B. Water sector in the Kingston Metropolitan Area (KMA)

1.4 The water sector in the KMA, with a population of approximately 1 million, is characterized by high levels of coverage for potable water, but limited sewerage facilities with household connection (40%). Despite the relatively satisfactory potable water coverage, an accumulated deficit on new investment and inadequate maintenance over the years has resulted in highly depreciated and inefficient water distribution and treatment systems.

1.5 Inefficiencies in delivery of service and billing, combined with poor operations, high levels of Unaccounted for Water (UFW) in the KMA, have resulted in a situation of increasing water scarcity. To address this problem, in the 1980's the GOJ began diverting 16 mgd (million gallons per day) of water from the neighboring watershed of Yallahs in the Parish of St. Thomas. However, even with this additional supply, demand during the dry season exceeds supply and low-pressure and lock-offs are common.

C. Water and sewerage services in Kingston and Saint Andrew

1.6 The project area comprising Kingston and urban St Andrew (KSA) has a population of some 588,300 inhabitants (23% of the island total). The KSA covers an area of approximately 155 km^2 and ground elevations range from sea level along the shores of the Kingston Harbour to approximately 525 meters above mean sea level in the foothills of Stony Hill in the north. Potable water is supplied to about 98% of the population within the project area by means of an extensive system fed by (i) four water treatment plants; (ii) some 9 wells within the Project Area; and (iii) potable water transfers from the Rio Cobre Basin in St Catherine, derived from the original 1970s Rio Cobre Scheme and from the White Marl wells.

1.7 The existing main sewerage system in Kingston currently serves an estimated population equivalent to 221,000 inhabitants, approximately 31% of the project area and most of the larger industrial dischargers. There are a number of small independent systems in the project area mainly serving housing developments that drain to package treatment plants prior to discharge to gulleys. There are over 20 pumping stations throughout the project area, the larger ones are Darling Street, Harbour Street and Nanse Pen.

1.8 Treatment of wastewater is very limited. Though several wastewater treatment facilities exist in the KMA, most do not operate satisfactorily due to inadequate maintenance and outdated treatment regimes and, as a result, a significant amount of untreated sewage is discharged into the Kingston Harbour. Although the sources of contamination in the harbour are numerous, the single largest factor contributing to its current state of degradation is the discharge of untreated sewage. About 12 mgd of untreated sewage are discharged into the Harbour with limited or no treatment. Other sources of contamination include sedimentation, industrial waste, shipping waste, solid waste from gullies, and leachates from the Riverton landfill and rainfall run-off.

D. The National Water Commission (NWC)

1.9 The NWC, while being the most important, is one of the players in the water and sewerage sector. Other players include the Ministry of Water and Housing (MOWH), the Office of Utilities Regulation (OUR), the Water Resources Authority (WRA), the National Irrigation Commission (NIC), Carib Engineering Corporation Limited (CECL), the Ministry of Local Government, Community Development & Sport (MLG), and the Ministry of Land and Environment (MLE), and the Urban Development Corporation (UDC).

1.10 The NWC has responsibility for the development of non-agricultural water sources nationally and for the operational aspects of the associated production and distribution systems. NWC also has development and operational responsibilities for major sewerage facilities.

1.11 The NWC has had a number of problems and weaknesses over the last two decades, which are in process of being overcome. The main weaknesses of NWC are: (i) the organizational structure promotes duplication, therefore accountability is weak; (ii) the demarcation of areas for services is not on the basis of water supply systems in existence; (iii) the deployment of resources is not always on the basis of identified needs; (iv) insufficient costumer focus; and (v) inadequate compliance management. On the technical side, NWC has large UFW levels, inadequate maintenance of its assets and insufficient resources to carry out a solid maintenance program. Through 2003 tariffs were not covering operating and maintenance costs and capital expenditures. Operating costs are high due to a large staff, which is currently being reduced and by the cost of energy required to produce water. Currently, the NWC is taking appropriate measures to address its organizational and institutional problems through its modernization and reorganization plan as described below. Regarding projects, the NWC has successfully executed a number of important large investment projects throughout Jamaica.

1.12 In addition, NWC Act indicates that the MOWH has powers over NWC in areas of financing, capital expenditures, tariff approval, human resources, appointment of board members, among others, reducing its autonomy if and when the powers are used. However, the MOWH, following the GOJ policy, has been promoting greater autonomy of NWC. In line with this, out of the nine members of the Board of Directors, six are from the private sector proposed by the Chairman of the Board in consultation with the GOJ. The current Chairman is an investment banker recognized as one of the most prominent bankers in Jamaica. The President of the NWC, is a long time career employee of NWC, who functions as the general manager and CEO, and has held the position during the tenure of several Ministers of the MOWH. In addition, external auditors audit NWC´s financial statements.

1.13 After tariff increases during the 1990s, NWC was able to partially recover cost levels through tariffs allowing for greater financial autonomy from the GOJ. However, for a full recovery of costs, NWC would need to reduce the current high levels of UFW, improve collection rates and continue to implement its new tariff and future changes approved by OUR. In February 1999, NWC received a 14% tariff increase and was permitted to continue to adjust tariffs monthly on the basis of a Price Adjustment Mechanism (PAM). Since 1993 tariff increases have been based on PAM, which takes into account changes in electricity rates, exchange rate and the consumer price index. In addition, this tariff adjustment included: (i) 100% increase in service charge; (ii) 4% "K" factor was added to PAM to cover capital expenditure on consumer metering and pump replacements; and (iii) increase in the sewerage charge for residential customers up to 100% of the metered water consumption. Through 2003 the tariff policy allowed revenues to cover only O&M.

1.14 In January 2004, the OUR approved NWC's request for a new tariff that will cover operation and maintenance costs, as well as depreciation and will generate

sufficient cash as to repay interest and capital on its debt. The new tariff is based on the new policy of the GOJ for the water sector, detailed below, with an aim for the sector to recover its costs and increase its efficiency. However, the OUR did not approve the change in the tariff structure as requested by NWC; therefore, cross subsidies continue mostly to costumers with less than 14 m3 per month. Within two years of project execution NWC will present a new request to the OUR in order to change the tariff structure.

1.15 It should be noted that after the OUR's decision on the tariff, the process has continue with public disclosure of the new tariff. The new tariff was effective January 1, 2004 and has been implemented by NWC.

E. The new NWC strategy and modernization plan

1.16 The objective of the GOJ's Water Sector Policy and its actions support the promotion of a financially viable NWC. The past strategy for NWC had been to expand the water supply and waste water systems. This strategy has changed in favor of consolidating the existing services and improving the efficiency of NWC by reducing UFW and operating costs, while at the same time requesting an increase in tariffs. The attention is now paid to: (i) righting the financial situation of NWC through cost savings, technical efficiency gains and rate reviews; and (ii) enhance and modernize NWC's technical and administrative capabilities.

1.17 NWC has started a process of modernization and fundamental change in the way it conducts its business. The restructuring and rationalization of the staff levels and composition are an integral part of the overall program of change and process of improvement. The new organizational structure of NWC will separate responsibility for functions to avoid duplications; reduce the number of regions from five to two; deploy resources on the basis of identified needs; improve efficiency in water distribution (reduction of UFW) and the collection system; a greater customer focus and better environmental and regulatory management.

1.18 Today NWC loses an estimated 60% of the water produced, due to technical reasons for about 40% and commercial (non-technical) for about 20%, even though the lack of production metering does not allow for precise production measurements. Consultants preparing the feasibility studies for the proposed project, estimated that with the reduction of UFW by 20% points, the goal of the proposed project, the energy bill of NWC could be cut by 22%. The energy bill represents approximately 20% of the operating costs of NWC.

1.19 Employee expenses represent 44% of NWC's total operating costs over the last 2 years. An initial analysis of staff requirements indicated that a 23% reduction of staff numbers would result in a 27% saving in costs. This will bring the employee expenses as a percentage of total billing to approximately 30%. NWC staff number in August 2003 was 2,494 and it is proposed to reduce by over 500 persons over 18 months period. The modernization plan, that includes an important change in the organizational structure of NWC and the reduction of

staff to improve operational efficiency, has been analyzed and proposed in a study carried out by KPMG Peat Marwick and has been approved by the NWC Board with implementation starting in 2003. NWC has already started the process to rationalize staff with a reduction of 200 up to December 2003.

1.20 The strategy of the GOJ and NWC is not to divest the NWC, but they are considering other forms of private sector participation (PSP). NWC is working towards outsourcing the meter reading and installation services, as well as the management of its vehicle fleet. In addition, Built, Operate and Transfer (BOT) and other forms of PSP are being considered. PSP will enhance the efficiency of the service and reduce operating costs of NWC, in accordance with the new strategy. The proposed project will directly support the efforts of NWC in both the areas of reducing UFW and the modernization of NWC. The proposed operation includes resources to finance the recommendations of the modernization plan and the equipment to reduce costs to assist NWC in reaching the efficiency gains, as described in the project components.

F. Institutional setting and sector policies

1.21 The Jamaican institutional model for the sector has been similar to most English speaking Caribbean countries in which the central government is responsible for financing the infrastructure and the NWC acts as the manager of that infrastructure.

1.22 In order to rationalize the water and sanitation institutional structure, the GOJ decided to separate the roles of policy formulator, regulator and entrepreneur. The former Ministry of Public Utilities was separated into sector ministries. As a result, the MOWH was created in 1998 as the main entity responsible for water policy formulation. The Ministry of Health (MH) continued to be responsible for water quality control and the OUR, established by the GOJ, has the responsibility for regulating energy, transport, communications and the water and sanitation sectors. The NWC, a public organization, remained as the main agency for water and sanitation provision in urban areas. This reform initiated in the last five years will be complemented with specific sector legislation.

1.23 The WRA, formerly the Underground Water Authority (UWA), was set up by GOJ to have overall responsibility for the regulation, control and management of all water resources. Today NWC is therefore subject to regulation by WRA and OUR. The WRA is primarily concerned with the allocation of water resources; the issuing of licenses for the extraction of water; the monitoring of water quality; and the monitoring of abstraction rates. The National Irrigation Commission (NIC) is responsible for the development of agricultural water sources and associated production and distribution facilities. NWC therefore needs to coordinate efforts with this organization in the development and usage of water resources. UDC shares the responsibility for the collection, treatment and disposal of urban sewage in a few areas. It constructs and operates water and sewerage systems in some new housing developments. In this respect, UDC

operates like a local utility. The OUR issues licenses for provision of utility services and is responsible for water tariff adjustment and service quality issues.

1.24 Finally, the National Environmental and Planning Agency (NEPA), implements environmental protection laws and regulations and monitors water and wastewater quality. The institutional structure is relatively recent and the actors in the sector are evolving. They are also cognizant of areas of overlap in responsibilities and seek to coordinate in these areas.

1.25 Complementary to the sector reform, in 1999 the Cabinet approved the Water Sector Policy to enable the provision of adequate water and sewerage services. The main objectives of the Policy are universal access to water by 2010, improvement in the efficiency of the NWC, and expansion of central sewerage facilities. The main elements of the policy are: (i) to reorganize the water institutions; (ii) to ensure services availability of a minimum quantity in a cost-effective manner; (iii) to ensure minimum standards of service to the population; (iv) to use and provide water efficiently; (v) to mobilize additional sources of funding; (vi) to introduce cost recovery mechanisms; and (vii) to develop an effective and efficient regulatory framework to protect customers, investors and the environment. After the Cabinet approved the Water Sector Policy and with the help of consultancies funded by the Bank, work began on the development of Strategy and Actions Plan, with the purpose to implement the Policy, completed in November 2000 and published for public consultation in June 2001.

1.26 The Cabinet has already approved the drafting instructions of the Water and Sewerage Service Act (WSSA) for the legislative power and it is expected that the enactment by the Parliament will come in the next legislative period (2004). The key outcomes of this reform are to formalize the independence and autonomy of the NWC as a commercial led company and the full autonomy of the OUR as sector regulator. It is important to note that the GOJ and NWC are already taking actions towards the goals of the proposed legislations and under the current legal framework the project can achieve its objectives and benchmarks. Under this Act, NWC would cease to have any regulatory functions and the NWC Act will be recast, so as to establish the NWC solely as a service provider. A decision is still pending as to whether a new Act will be written to create a National Water Corporation or to recast the existing Act. In both cases, NWC will formally act with a more commercial focus and with more autonomy from the MOWH, even though this situation is de facto occurring. The instruction for the WSSA also defines a role for the private sector in the provision of water services, the role of policy maker for the MOWH and that of OUR as regulator of the service.

G. Regulatory environment

1.27 The Bank assisted the GOJ in its efforts to establish the OUR, which was accomplished following the promulgation of the OUR Act of April 1995. The Act was amended in the year 2000 to provide the agency with the power for the regulation —economic regulation— of electricity, telecommunications, public

passenger transport and water and sewage. Currently the OUR has full responsibility for regulating the NWC. Based on the Act, OUR will (i) receive and process all applications for a license to provide any utility service; (ii) enquire into the nature and extent of the utility services provided by an approved organization; (iii) determine the rates or fares which may be charged; (iv) monitor the operations of an approved organization to enforce provisions of the law; and (v) specify financial penalties, which may be incurred by a licensee for breach of any terms of the license.

1.28 OUR objectives are to: (i) establish and maintain transparent, consistent and objective rules for the regulation of utility service providers including NWC; (ii) promote the long term, efficient provision of utility services, e.g. OUR is monitoring an existing regulatory framework with NWC on agreed monitoring indicators; (iii) provide an avenue of appeal for consumers; (iv) work with other related agencies in the promotion of sustainable environment; and (v) act independently and impartially in all matters including setting tariffs.

1.29 The OUR has adopted measures to guarantee the protection of the consumers of the services it regulates, the most relevant being the establishment of a public consultation process for the key regulatory procedures that guarantees transparency in the issued regulation. Tariff requests from NWC as well as quality standards for the services provided by the utility are subject to public consultation. A second key element of the process is the establishment of "Levels of Compensation" by which a customer can be compensated for failures in the services provision. The quality standards adopted after a public consultation are part of the performance indicators adopted for the midterm and final evaluation of the Project (see table 3.2). The standards are divided into two groups, overall standards (OS) and guaranteed standards (GS).

1.30 The OUR is independent from the sector ministries and is attached to the Ministry of Development (a Cabinet Office). It finances its activities from the regulatory fees on the regulated utilities and processing fees from the license applications. The Office is comprised of a Director General who heads the Office and two deputy directors, one for electricity and water and the other for telecommunications. The Governor-General appoints the director general for a period between three and seven years and he cannot be removed from office unless clear misconduct is demonstrated. The Prime Minister appoints the deputy directors on the same terms as the Director General.

1.31 The regulatory process in the water sector comprises a series of activities that concludes with the establishment of (i) a set of tariffs for a determined period, and (ii) a regulatory framework —quality standards associated to a determined tariff level— for the regulated utility (NWC). In 1999 OUR defined a set of 14 "quality of service standards" that have been included in successive regulatory frameworks. The regulatory framework as well as the tariff requests of NWC is subject to a public formal consultation process around the country.

1.32 In terms of economic regulation OUR seeks an economic tariff —long run marginal cost— guaranteeing the financial viability of the regulated agency —a positive cash-flow, including a "fair" return on capital— for the tariff period approved. The approved tariff is granted conditioned on the compliance of the set of standards agreed by the utility —the NWC in this case— with the regulatory framework. The new tariff levels are defined in conjunction with a new set of quality standards levels. The quality standards remain fairly stable. It is the operating targets that are subject to change[1].

H. Projects of other agencies

1.33 The Government of Japan has supported Jamaica in financing several projects in the water sector in the recent past, including: a potable water treatment plant, the sewerage collection and a wastewater treatment plant for Montego Bay and a potable water and distribution system for Negril. The Water Supply and Rehabilitation Project for the KMA, funded with a loan for approximately US$65 million from the Japan Bank for International Cooperation (JBIC), was approved in December of 1996. This project, concentrated in Greater Spanish Town and SE St. Catherine part of the KMA, is focused on: (i) reduction and control of UFW and mains replacement; (ii) rehabilitation of the existing water supply facilities; and (iii) development of groundwater sources, including the strengthening of trunk transmission and distribution mains. These activities would complement the actions contemplated in the proposed Bank financed project.

1.34 The JBIC project is in the early stage of start-up, and the NWC has established a project management unit. This project was reformulated before startup to include a comprehensive plan of action for an institutional strengthening component. Only after the reformulation took place, the project started disbursements in November 2002 and has disbursed, as of August 2003, approximately US$2.5 million to finance the institutional strengthening component and final designs. The JBIC project has as its primary objective to increase water supply and improve quality of life of the population in the KMA by improving KMA water supply system, in particular in Greater Spanish Town and Southeast St. Catherine. The project consists of three components: (i) Institutional Strengthening and Reduction of UFW; (ii) Development of ground water sources; and (iii) Artificial Aquifer Recharge and Irrigation Compensation.

1.35 The Bank has been actively coordinating its activities with JBIC. During the preparation of this operation, the coordination has taken place specifically at the policy and project level. On the first level, JBIC agreed to work in Jamaica following the Bank's public utilities policy; as a result JBIC developed, parallel to its physical investment program —in Spanish Town and St. Catherine—, an institutional strengthening component program for NWC that aims at improving the commercial area of the Commission, and developing a business plan for the

[1] The current thinking is to incorporate these targets in the forward-looking tariff formula in the form of an efficiency adjustment.

company, and consultancies to modernize the utility. JBIC conditioned the disbursement of one of its loan tranches to the OUR becoming the regulator of the water sector in the country.

1.36 The Bank prepared the Project that in its physical and institutional components complements JBIC's operation. In the physical component it includes rehabilitation works in the parishes of Kingston and St. Andrew, as a complement to the Spanish Town and St. Catherine rehabilitation of the JBIC's operation. In the institutional component it includes other actions complementary to JBIC, such as the outsourcing of some key commercial activities, the establishment of information management systems and other components described in Chapter II. As part of preparing this project document the Bank's team has maintained close coordination with the JBIC team, through a series of meetings both in Washington and Kingston, to ensure that the objectives and components of both projects complement each other. NWC conducted studies for the institutional strengthening of Company financed with JBIC resources. The Bank's financed project will implement the recommendations of the JBIC studies in the six areas indicated in Chapter II.

I. Other Bank loans and lessons learned

1.37 The Bank's involvement with the water sector in Jamaica includes 5 operations totaling US$25 million. After more than 20 years, in November 2001, the Bank resumed its operations and approved the loan 1360/OC-JA for US$10 million to finance the Rural Water Program, which aims at improving sanitary and health conditions in selected rural communities through the financing of environmentally, financially and institutionally sustainable water systems. Currently, the loan has complied with conditions prior and the project is in execution.

1.38 Since 1996, the Bank's efforts have focused on establishing a strong policy and regulatory framework for the sector. A MIF operation assisted in developing the legislation and regulatory instruments to empower the OUR as the main regulatory agency for energy, telecommunications, transportation and water. A technical cooperation (TC) project built upon Bank support for developing a water sector policy by producing a detailed sector strategy and action plan. Finally, a second MIF project was authorized to support the NWC in testing plans for private sector provision of potable water and sanitation services in three pilot cases: Negril, Montego Bay and Ocho Rios. Due to political developments shortly after project approval, this operation was cancelled. In addition, the Bank approved in December 18, 2002, ATN/SF-8164-JA for US$500,000 to support the environmental management of the Kingston Harbour, and is currently in execution. This TC would set up the institutional system for the environmental management of the Kingston Harbour.

1.39 It is important to note that the profile I of this project was approved in November 2000 and since then the Project Team has been working with the GOJ and NWC

in setting up the necessary conditions to move forward with this operation. A new set of sector policies has been adopted by the GOJ in line with Bank's policies. NWC Board has approved and initiated a comprehensive modernization and restructuring Program, and the implementation of a new tariff has been submitted to and approved by the regulator with the GOJ support. Once these actions took place, and the Project Team was convinced of the political will to carry them through, the decision was made to move forward with this operation. Not many lessons can be derived from our activity in financing projects in this sector in Jamaica since the Bank, other than as stated above, had little activity in the sector over the last two decades. From the Rural Water Program, we have learned that fiscal constrains have led to important delays in project execution. However, there are some additional lessons that can be drawn both from Jamaica and other countries: (i) fiscal constraints can promote important reforms in the water and sanitation sector, as is the case in Jamaica, and the Project should help reduce the transfers from the GOJ to NWC, contributing to mitigate fiscal problems; (ii) as the Bank has worked more actively with the Caribbean water companies, the Bank has learned that overall the cost of producing water is higher than in the Latin American Countries; (iii) from other countries an important lesson is that the Bank's presence can actually improve the sustainability of a water company and improve services, even when the company is not sustainable and the service is unreliable to begin with; (iv) in most countries the Bank has learned that improving water companies and the quality and coverage of service is a long-term process; (v) in Ecuador the Bank learnt that different organizational structures could provide for satisfactory results in structuring a Bank project - Guayaquil-Ecapag was structured with the main objective of being a private concession, while the organization in Quito had a more public sector approach; (vi) the Bank has learned that changes needed in the sector and the water companies require strong political support to undertake the required reforms; and (vii) that communications with the stakeholders is an important requisite for successful sector and companies reforms, including tariff changes.

J. Bank and country strategy and project rationale

1.40 The Country Paper for Jamaica (GN-2025) defines two overriding objectives. The first objective is to support the establishment of a satisfactory macroeconomic environment, and the second, to support a process of structural adjustment and reform aimed at promoting an improved environment for long-term private sector led growth and development. The Bank will seek to attain these objectives by concentrating its activities in five priority areas: (i) financial sector restructuring and reform; (ii) private sector development; (iii) public sector modernisation; (iv) social development; and (v) environmental management.

1.41 The proposed project is consistent with the Bank's strategy for Jamaica in the areas of: Modernization of the public sector, as it aims to enhance efficiencies and effectiveness of a public company; and private sector development through the participation of the private sector in the management of the water supply and wastewater collection, treatment and disposal in the KSA. By providing the

population with good quality potable water with positive impacts in their health and quality of life, the Program will have a positive social impact, which is consistent with the Bank social development strategy. Lastly, this program will support the necessary actions to plan for the expansion of the wastewater treatment and collection systems, and develop alternatives to address wastewater treatment issues. These activities are expected to generate environmental benefits.

1.42 The expected results and benefits of the potable water rehabilitation project would be four fold, in line with the problems identified above. The first one is the establishment of a sustainable national water company that depends less on GOJ transfers. The second will be the reduction of cost that will be at least one third of the energy cost use by NWC for the KSA system plus the cost of chemicals and maintenance of the pumps, saving scarce foreign exchange paid for oil imports required to produce energy in Jamaica. The third is the reduction of water shortages, which in turn will increase the welfare of the users. The fourth will be the additional water available which will delay the need for investments in new water supply systems. The project components are designed to address the problems identified and are required to reach the project objectives.

1.43 Although the measures described in previous sections such as the modernization and the new tariff should take care of most of the underlining problems that the company faces today, NWC still needs to address major technical problems related to the historically recorded insufficient level of maintenance and the unorganized growth in the network. These two endemic problems have resulted in a significantly high level of UFW. Therefore, the project will provide financing mostly for the rehabilitation of the potable water supply network, as this is the most pressing area to refurbish in order to gain financial sustainability. Once this is under control and the Company has a set stream flow of funds to operate, other projects such as sewerage and sewage treatment will be developed.

1.44 During the past two years the tight fiscal situation has caused a reduced allocation of resources to capital expenditures, resulting in a negative effect on the availability of counterpart funds for new projects. This situation has slowed down the processing of pipeline projects to be funded by the International Development Partners including priority projects included in the Bank's operative program. During the period March-April 2004, the GOJ went through an intensive budget exercise for the period 2004-05, and the Ministry of Finance in close collaboration with the public entities established the priorities of the capital program. The budget was approved by Parliament in early May, and only then were the priorities of the capital program confirmed by the Government. This project does not require GOJ funding for local counterpart, since it will be funded with internal cash generation from NWC. More over, significant GOJ future transfers to NWC will stop, including repayment of debt and funding of capital expenditures.

II. THE PROJECT

A. Objective and description

2.1 The general objective is to contribute to the improvement of the quality of life of the Kingston population by improving the reliability of potable water supply and sanitations services. The specific objective is to improve the quality of the services provided to the Kingston and Saint Andrew Area and increase the efficiency and sustainability of NWC.

B. Project components

1. Reorganization and modernization of NWC

2.2 This component has the goal to have NWC operated and managed in an efficient and sustainable manner and would finance the reorganization and modernization of NWC, in particular: (i) customer service, to include billing and collection, customer information system (customer research, measurement and customer service index), including a public awareness and the study to change the tariff structure, so that subsidies are targeted only to the fourth quartile of the population; (ii) capacity building and training, in areas such as procurement, asset management and maintenance, customer service, with the aim at not only improving technical skill but also to start a cultural change in NWC; (iii) customer education; (iv) strengthening the management information system, including compliance with regulator and reporting to the Bank and mid and final evaluations; (v) private sector participation, to include improving its model contracts for outsourcing services, both existing and new ones, "user association management of the red zones"; and studies to identify opportunities for private sector participation; and (vi) support for changes in the corporate structure. Concurrently, NWC is rationalizing its staff, a process that includes the payment of severance, retraining and counseling; part of this expenditure would be considered as local counterpart.

2. Rehabilitation of the potable water supply for KSA

2.3 This component will help NWC to meet water demand for the medium term and has as its major goal the reduction in the levels of UFW by minimizing physical losses to an economically and technically acceptable level. This component, the largest of the project, includes: (i) rehabilitation and improvement of water production infrastructure; (ii) distribution network zoning; and (iii) leakage reduction through contracts with the private sector in which payment would be based on performance.

2.4 This component will rehabilitate: (i) existing water treatment plants to bring them to acceptable operating standards; (ii) pumping stations to minimize energy wastage and improve service reliability; and (iii) pipelines and service storage facilities to reduce leakages. Under this component bulk flow meters and

micrometers will be installed to better determine base flow and distinguish leakage from commercial losses.

3. Sewerage and sewage treatment for KSA

2.5 This component has the goal of improving the sewage collection system and formulation of a plan to expand sewage collection and treatment system. It includes the rehabilitation of selected sewage pumping stations to avoid the overflowing of the system with very negative public health and environmental consequences. In addition, this component will include the preparation of an action plan to develop a wastewater treatment plant at Soapberry. This action plan would follow a pattern by which the first step is to conduct a pre-feasibility study with a proposal for the best option to build, finance and operate such a plant. A second step will include feasibility studies, site investigation, engineering designs, criteria to prepare a full Environmental Impact Assessment (EIA) of the wastewater treatment plant, establishment of a three-dimensional water quality model of the Kingston Harbour, which will assist with the planning of further actions to clean the Kingston Harbour and comply with the protocols of the Cartagena Convention.

C. Financing conditions

2.6 The Bank will finance 73% of the total cost of the proposed program, which is equivalent to US$40 millions, from Ordinary Capital (OC) and the use of the Intermediate Financing Facility (IFF) to be disbursed in US dollars from the Single Currency Facility, in accordance with the Bank policies, under the conditions stated in table 2.1.

TABLE 2.1
FINANCING CONDITIONS

Amortization Period:	25 years
Grace Period:	5 years
Disbursement Period:	5 years
Currency:	Dollars of the United States from the Single Currency Facility
The interest rate, credit fee, and inspection and supervision fee mentioned in this document are established pursuant to document FN-568-3 Rev. and may be changed by the Board of Executive Directors, taking into account the available background information, as well as the respective Finance Department recommendation. In no case will the credit fee exceed 0.75%, or the inspection and supervision fee exceed 1% of the loan amount[2].	
Interest rate: Credit fee: Inspection and supervision:	Adjustable option/LIBOR-based option 0.25% 0.0%

[2] With regard to the inspection and supervision fee, in no case will the charge exceed, in a given six-month period, the amount that would result from applying 1% to the loan amount, divided by the number of six-month periods included in the original disbursement period

Table 2.2

Cost and Financing

(Thousands US$)

Categories	IDB	Local	Total	%
I Engineering & Management	**500**	**2,100**	**2,600**	**4.8%**
1.1 Management		1,100	1,100	2.0%
1.2 Supervision		1,000	1,000	1.8%
1.3 Auditing, Evaluation & Monitoring	500		500	0.9%
II Direct Costs	**28,000**	**10,500**	**38,500**	**70.4%**
2.1 Reorganization & Modernization of NWC	1,100	6,500	7,600	13.9%
2.2 Rehabilitation of Water Supply System for KMA	22,900	4,000	26,900	49.2%
2.2.1 Water Production Infrastructure	6,000	4,000	10,000	18.3%
2.2.2 Distribution Network	2,000		2,000	3.7%
2.2.3 Leakage Reduction	14,900		14,900	27.2%
2.3 Sewerage & Sewage Treatment for KSA	4,000	0	4,000	7.3%
2.3.1 Sewerage Rehabilitation	2,000		2,000	3.7%
2.3.2 Wastewater Treatment Plant Studies	2,000		2,000	3.7%
III Concurrent Costs	**2,600**	**0**	**2,600**	**4.8%**
3.1 Feasibility studies. PPF	1,000		1,000	1.8%
3.2 Designs and other studies	1,600		1,600	2.9%
IV Unallocated Costs	**5,000**	**1,940**	**6,940**	**12.7%**
4.1 Contingencies	2,500	1,500	4,000	7.3%
4.2 Cost Escalation	2,500	440	2,940	5.4%
V Financing Costs	**3,900**	**160**	**4,060**	**7.4%**
5.1 Interest	3,900		3,900	7.1%
5.2 Credit fee (0,25%)		160	160	0.3%
5.3 Inspection & Supervision (0,00%)	0		0	0.0%
Total	**40,000**	**14,700**	**54,700**	**100.0%**
%	73%	27%	100%	

D. Cost and financing

2.7 The distribution of the program's total cost by source of financing and category of investment is shown in Table 2.2.

2.8 The interest rate, credit fee, and inspection and supervision fee mentioned in this document are established pursuant to document FN-568-3 Rev. and may be changed by the Board of Executive Directors, taking into account the available background information, as well as the respective Finance Department recommendation. In no case will the credit fee exceed 0.75%, or the inspection and supervision fee exceed 1% of the loan amount[3]. The borrower may select the

[3] With regard to the inspection and supervision fee, in no case will the charge exceed, in a given six-month period, the amount that would result from applying 1% to the loan amount, divided by the number of six-month periods included in the original disbursement period.

Interest rate to be under an Adjustable option or LIBOR-based option. The Credit Fee is currently 0.25% and the Inspection and supervision is 0.0%.

2.9 The local counterpart will be contributed by NWC. Out of the total amount of local counterpart to be provided over the execution period US$4.6 million have been spend and are part of the resources to finance the modernization program of the Company, specifically severance payments. The rest of the local counterpart, for US$10.1 million, will be generated from internal cash generation and, as is demonstrated in the section on financial viability, NWC has the capacity to generate such resources.

1. Engineering and management

a) Management and Supervision

2.10 This category includes the operational costs of the Project Implementation Unit (PIU) and the cost of hiring the consultants necessary to carry out its functions during the five years of Program execution. Supervision includes the cost of the firms that will support NWC with the supervision of the construction contracts and contractors who will report to the PIU.

b) Auditing, evaluation and monitoring

2.11 This category includes the cost of hiring an independent auditing firm to audit the financial statements of the Project. It also includes the data gathering and evaluation of the program's performance, both mid and final evaluations, supervision and monitoring. In addition, this component includes regulatory compliance with a revision of the reporting system and information required by OUR from NWC.

2. Direct costs

a) Reorganization and modernization of NWC

2.12 This category is for the implementation of the modernization plan of the NWC approved by its Board. It also includes resources to finance training and consultants for: customer services, procurement, compliance and reporting, asset management, maintenance, consumer education and outsourcing activities. This item will finance the severance payment of those employees, whose jobs will be eliminated as part of the modernization plan, using local counterpart for a total of US$6.5 million.

b) Rehabilitation of water supply system for KMA

2.13 This is for the financing of rehabilitation works for the water treatment plants (WTP), water intakes, pumping stations, distribution tanks, as well as the works to establish the pressure zones and the district metered areas on the water

distribution network. These last two items are essential to reduce the UFW. This component will also finance the leakage reduction contract.

2.14 At the WTP turbid meters, chlorinators, alum feeders, pumping equipment, electrical equipment and general instrumentation will be replaced or repaired. Spare parts to assure proper maintenance of the equipments and the filters backwash system will be acquired under this component as well. At the pumping stations pumps, motors and switchgear, control and protection devices will be replaced or repaired.

2.15 At the distribution tanks works for sand blasting and painting (steel tanks) repair of leakages, replacement of valves and disinfection of the repaired unit will be carried out. At the water intakes pipes and sluices gates will be replaced. The works to establish the pressure zones will basically involve the installation of gate valves to isolate the different zones and pressure reducing valves to control pressure from zone to zone. To establish the district metered zones it will be necessary to install gate valves and replace some pipes. In addition, this component will finance the contract with the private sector to reduce UFW.

c) Sewerage and sewage treatment for KSA

2.16 This component will finance the feasibility studies for the wastewater treatment plant, including the prefeasibility studies that will result in the options of how best to finance, build and operate the facilities, and the consulting services for the elaboration and calibration of a hydrodynamic water mathematical model for the Kingston Harbour. It will also finance the rehabilitation of Darling Street and Nanse Pen pump stations. **An agreement between NWC and GOJ whereby the GOJ will commit to transfer funds to NWC to cover debt payment related to the subcomponents of the sewerage treatment plant (STP) will be a condition of the execution of the loan.**

3. Concurrent costs

2.17 This component covers the feasibility studies and designs for the preparation of this project financed through a Project Preparation Facility (PPF) for US$1 million and the rest with resources of the loan. With the first disbursement PPF resources for US$1 million will be replenished.

4. Unallocated costs

2.18 The contingencies were estimated as 7.3% of direct costs and the cost escalation was estimated as 5. 4% of direct costs.

5. Financing costs

2.19 This category, which accounts for 7.4% of the total cost of the project, includes interest during the period of Program execution and the credit fee.

III. PROGRAM EXECUTION

A. Organization for the execution of the project

3.1 NWC will be the executing agency for the project. The NWC's Engineering Division will carry out all project implementation within NWC. The Chief Engineer, an experienced individual with an international and Jamaican private sector background, who heads this Division, is a senior vice president and reports directly to the President of NWC. There are some 32 professionals in the Division.

3.2 A Project Implementation Unit (PIU) will be established to manage the project and will report to NWC's Chief Engineer. A Project Manager will be appointed to head the PIU and will be directly responsible for all aspects of the Project and the liaison with the Bank. The Project Manager will be supported by: (i) a project administrator, with certify expertise in procurement, dealing partly with procurement and tender documents and partly with practical issues e.g. work permits; (ii) in-house engineers from the Engineering Division or from term contracts with private sector consultants for the water and sewerage components and the corporate planning division for the modernization component; and (iii) a project accountant who may also work with other project teams. Additional specialist technical support will be obtained from local and international consultants.

3.3 Day to day operations and management of PIU will be the responsibility of Project Manager. The Project Manager will have at least 15 years of professional experience, including at least 5 years in managing large multi-facetted multi-disciplinary projects of a similar nature.

3.4 A steering committee that will include representatives of the MOWH, Ministry of Finance and Planning, the Planning Institute of Jamaica and, the National Water Commission will be established. This committee will relate with the PIU and meet at least once every three months to be updated on the progress of the Project and to provide policy guidance, monitor over all performance and facilitate work of the PIU in terms of ensuring that the necessary GOJ approvals and clearances are received in a timely manner. **The establishment of the steering committee is a condition prior to first disbursement.**

3.5 The PIU will be provided with dedicated office space fully equipped with all necessary furnishings, furniture and computing, reproduction, transport and communication equipment.

3.6 The PIU will use the services of other Divisions in NWC, such as Corporate Strategic Planning. The PIU, as is the normal practice in other major projects executed by NWC, could hire private firms to assist with preparing tender documents, the tendering and supervision of contracts and contractors. In addition, the PIU will coordinate the activities of Private Consulting Firms (PCF)

for promotional activities, community outreach, definition of private sector participation, and all other activities of the project. **Establishing the PIU, appointing its Project Manager and key personnel and providing a staffing plan, will be a condition prior to first disbursement.**

B. Program execution plan

1. Rehabilitation of water supply system for KSA

3.7 The water production infrastructure and distribution network activities will be contracted after bidding processes. The UFW reduction activity will also be contracted after a bidding process and will be executed through a contract after the network is adequately pressure zoned, and where District Metered Areas (DMA) are established to optimise the leakage control abilities of the contractor and NWC staff in the long-term. The contract will be signed with a specialized contractor, and will contain incentives to substantially reduce water leakage. It is also the intention that UFW control activities are to be institutionalised within the NWC. The payments to the contractor will include a success fee contingent on the water saved and maintained over an agreed period; thus the contractor will have incentives to drive down leakage as quickly as possible.

2. Sewerage and sewage treatment for KSA

3.8 The Sewerage rehabilitation activity will be contracted after a bidding process. The wastewater treatment plant studies will be implemented by a consulting firm hired through a bidding process. The pre-feasibility studies should determine the option under which the Waste Water Treatment Plant (WTP) will be constructed, financed and operated. Among the options is a Build, Operate and Transfer (BOT) type of arrangement or a traditional public sector project. If a BOT is the selected option, the loan resources will be used to contract an investment bank type of consultancy to carry out the process. If the traditional public sector project is selected, the loan funds will be used to finance the feasibility studies of the least cost solution to treat the sewage from KSA.

C. Status of program preparation

3.9 The feasibility studies have been prepared by a consulting firm hired after an international competitive bidding and financed through a Bank PPF, (loan 1365/OC-JA) and the proposed loan. Payments to the consulting firm up to May, 2004 include the PPF resources and funds advanced from NWC in the amount of US$300,000. As part of the same contract, the same consulting firm will complete all final designs and tender documents for the project, by October 2004. There is no need to acquire new land or rights of way.

D. Procurement

3.10 The NWC will be responsible for procurement of goods and related services and contracting works in accordance with the Bank rules and procedures stipulated in Annex B of the loan contract. International competitive bidding will be required for procurement of goods costing US$250,000 or more and works costing US$1.5 million or more. Consulting services will be contracted in conformity with the Bank's Policies and Procedures for the Procurement of Consulting Services, contained in Document GN-2220-10, of February 2004 and international competitive bidding will be used for contracts over US$200,000. Bids below these thresholds will follow domestic legislation that is compatible with Bank procedures. The Procurement Schedule (see Annex II) presents the estimated cost of the lots.

E. Recognition of Expenditures and Retroactive financing

3.11 **Recognition of Expenditures.** NWC has requested the Bank to recognize US$4.6 million of expenditures made as part of the local counterpart contribution. These are expenditures made since January 2003 to pay for the modernization plan in the amount of US$6.5 millions for severance payments. **Retroactive Financing.** In addition, NWC has also requested that the Bank recognize as part of the expenditures to be funded with the loan, payments of US$300,000 for the consultant services to prepare the project, carried out through international competitive bidding[4]. The project team confirmed that the bidding for those consultancies and other payments were conducted in accordance with Bank policies.

F. Operation and maintenance

3.12 The works built will be operated and maintained by NWC, which has the technical staff and means for proper operation and maintenance (O&M). In addition, improvements to the operations and maintenance of NWC operations will be strengthen with JBIC resources and this program. **NWC will present to the Bank annually within the first calendar quarter of each year, for 10 years counting from completion of the first work of the project, an annual O&M plan for the systems financed with loan proceeds. This should include a report on their management in the preceding year and on the condition of the systems.**

G. Execution period and disbursement schedule

3.13 The execution period of the project will be five years, with a minimum of three years as per Table 3.1.

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[4] Up to May 2004, US$1 million had been expended from the PPF and US$300,000 from NWC own resources for pre investment studies of the project. The total cost of the PPF is US$1 million.

TABLE 3.1
Disbursement Schedule (in US$ thousands)

Year	IDB	Local	Total	%
1	5,282	9,678	14,960	27.35
2	10,502	2,748	13,250	24.22
3	9,232	708	9,940	18.17
4	7,852	808	8,660	15.83
5	7,132	758	7,890	14.42
Total	**40,000**	14,700	54,700	100.00
%	**80.00**	27	100	

H. Revolving fund

3.14 After all the conditions precedent to the first disbursement have been complied with, the Bank may advance funds from the loan to establish a revolving fund of up to a maximum of 5% of the total cost of the project. The funds are to be kept in a special bank account in the name of the project. The NWC will present to the Bank within 60 days after the end of each six-month calendar period consolidated reports on the status of the revolving fund.

I. Performance indicators

3.15 The project will be monitored on the basis of the indicators established in the Logical Framework (see Annex I). Table 3.2 shows indicators and benchmarks that would be used for mid term and final evaluations of the project.

Table 3.2
Benchmarks and Performance indicators

Indicator	Mid-term Review	End of the program
Employees/1,000 connections from 7.5 to:	6.2	6
Employee cost as a percentage of revenues reduce from 47% to:	38%	32%
Active accounts of water meter read and billed increased from 71% to[1]:	75%	85%
Net internal cash generation from -20% of capital expenditure to not less than:	10%	20%
Reorganization of NWC by[2]:	implemented	
UFW in project area reduced from 61% to[3]:	55%	45%
Compliance with OUR standards of quality of service by[4]:	overall standards	specific standards
NWC "Corporatization" by[5]:	implemented	
Pre feasibility studies and EIA of STP by:	completed	
Three dimensional Hydrodynamic Harbour model by:	under preparation	completed
New tariff structure to target subsidies[6]	implemented	

1 The metering target will include bulk metering in the red zones.

2 In this context the reorganization of NWC includes the staff reduction and the re engineering of the company structure.

3 If the UFW were to be different from 61% the expected reduction for the mid term should be equivalent of 6% points and 16% by the end of the program.

4 Definition of parameters can be found in the Bank's files.

5 Short of achieving the legal Corporatization the project team would review the variables specified in paragraph 3.18

6 If OUR does not approve the new tariff structure, NWC will make its best efforts to ensure the targeting of subsidies to the fourth quartile of the population.

J. Mid-term review

3.16 A mid-term review of the project will be performed when 50% of the loan resources have been disbursed or when 30 months of the program execution have been elapsed, whichever occur first. The review will verify compliance with the performance indicators for each year, as per the log frame, and the general progress made in program execution. The NWC undertakes the obligation to perform jointly with the Bank a mid-term review to examine the overall progress made in the project execution and the extent to which the performance indicators, as depicted in table 3.2, have been fulfilled. This review will allow management to assess the overall progress of the project and decide what corrective actions, if any, are needed to continue with the execution of the project. The commitment of resources above 60% of the loan resources requires the non-objection of the Bank after a conforming evaluation made by the Bank and NWC of the project benchmarks and performance indicators. This review will also include the Guarantor's obligations towards this project. **The mid-term review will be a contractual condition.**[5]

3.17 The benchmarks for the mid term review indicated in Table 3.2 are self-explanatory, with the exception of the "corporatization" benchmark that requires further elaboration. The compliance with this benchmark can be achieved in different ways. One way is the legal "corporatization" of NWC, including the managerial and financial elements indicated below. The GOJ is committed to take the steps to promote the legal actions to repeal or amend the NWC Act, to provide for a more commercialize focus NWC , to be financially self sufficient and efficient and avoid direct political intervention in the operations of NWC.

3.18 Given that only the Legislative Assembly can amend or repeal the NWC Act, short of the legal corporatization of NWC, the GOJ and the NWC have agreed to the following: (i) Corporate Governance. Within the context of NWC Act, the GOJ will continue to seek selection of the board members from the private sector on the basis of their professional expertise and representing stakeholders, with the intent of providing more autonomy to NWC board and management. (ii) Financial Management. External independent auditors continue to audit NWC's financial statements; (iii) Human resource management. A system of compensation based on performance will be implemented and the selection of the CEO and main officers will be conducted in an open and transparent manner to select the best possible candidates. The intent of this performance incentive and selection process is to ensure that NWC operates like a commercial business; and (iv) Operational. NWC complies with the requirements of OUR and the efficiency gains are met. The managerial and financial parameters indicated above, together

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[5] The procurement of goods and services as well as the construction contracts have been split in two main packages. The first one comprises all the works, goods and services necessary to increase the potable water availability in KMA and prepare the water network to carry out the leakage reduction contract and some of the sewage treatment studies. This package will account for approximately 60% of loan resources. The leakage reduction contract and the sewerage work will constitute the second package.

with the other benchmarks of Table 3.2, should promote greater autonomy and independence of NWC and its efficiency in service delivery

K. Control, auditing, monitoring and evaluation

1. Accounting and internal control

3.19 The NWC/PIU will open separate and specific commercial bank accounts for managing the Bank's loan and local counterpart funds. In addition, the NWC/PIU will maintain adequate financial and accounting records of the project funds and internal control systems to allow for verification of transactions, identification of the sources and uses of project funds, and provide documentation to verify transactions and to facilitate timely preparation of financial statements and reports.

3.20 Project financial and accounting records will be arranged so that: (i) the amounts received from the various sources can be easily identified; (ii) project expenses are reported in accordance with the chart of accounts approved by the Bank, with distinction made between the Bank loan and funds from other sources; and (iii) that the necessary details are included to identify goods acquired and services contracted, as well as their use.

3.21 The NWC/PIU will be responsible for: (i) preparing and submitting disbursement requests to the Bank and the corresponding justification of expenses; (ii) preparing and submitting to the Bank the annual financial statements regarding project's expenses and the semi-annual Revolving Fund Status Reports; (iii) maintaining an adequate disbursements support documentation filing system; and (iv) presentation of an annual progress report on the data and parameters agreed with the Bank to measure the effectiveness of the implementation of the project. **As a condition prior to first disbursement the NWC/PIU has to demonstrate to the Bank that they have implemented adequate systems of internal control as well as a financial accounting system that is in compliance with Clause 7.01 of the General Conditions of the Loan Contract.** As part of the regular biannual reports to the Bank, NWC will, during the execution of the project, present to the Bank information on the data and parameters to measure its efficiency and the effectiveness of the execution of the project.

2. External audits

3.22 In accordance with Bank policy (AF-100), the NWC/PIU will prepare and submit to the Bank, within 120 days after the closing date of each fiscal year and within 120 days after the date of the last disbursement of the financing, the financial statements of NWC and the project, audited by a firm of independent auditors acceptable to the Bank, based on the terms of reference previously approved by the Bank.

3. Supervision, monitoring and evaluation

3.23 The Bank's Country Office in Jamaica (COF/CJA) will be responsible for program supervision and follow-up. The NWC will present an initial report to the Bank containing the program's work plan and detailed execution schedule. It will also present an annual operating plan to the Bank at the start of each year, including the levels of the performance indicators, which are described in the following section, to be obtained during the year.

3.24 Currently the NWC has the capacity to monitor the execution of the project. The Corporate Planning Vice Presidency (CPVP), which reports directly to the President, is in charge of this function. This capacity has been developed over a number of years of executing large investment projects and over the last few years reporting to the OUR on a regular basis. In addition, the NWC may contract private firms to assist with the day-to-day supervision of the contractors, both on the technical and environmental requirements. The OUR requires from the NWC, as well as from any other private or public company being regulated, a report on a semi annual basis on the progress of a series of parameters that reflect the efficiency of delivering service and the quality of such service.

3.25 The OUR requirements have been designed to have the customer as the center of concern. These requirements are very demanding in terms of reporting and the NWC has not always had the ability to meet the full requirements, including the submission of the reports in a timely manner. The information generated by the CPVP is used by the President and the Board as part of the management information system for the day-to-day operations and for planning and supervision purposes. The loan will finance the strengthening of the management information system, in particular the hardware and software that will assist in keeping updated the information required to monitor and evaluates the system, as well as for managing the company. This information will also be used to perform the mid term evaluation and the final evaluation of the project.

3.26 The baseline to be used to measure the effectiveness and progress of the project was established during project preparation. Even though both NWC and the Bank are satisfied with this baseline, it was thought appropriate to confirm such baseline indicators. To make data available for future evaluations of the efficiency, effectiveness and progress of the project in achieving the objectives and to draw lessons from the experience in project execution, the borrower will confirm to the Bank the baseline indicators and benchmarks of table 3.2 as well as those of the Logical Framework (see Annex I). **Evidence of NWC's Board approval of the baseline indicators will be a condition to first disbursement and the data to evaluate the efficiency, effectiveness and lessons learnt of the project will be a contractual condition.**

3.27 In addition to the mid term review or evaluation, a final evaluation will be financed with project funds. The evaluation will assess the implementation of project and will document outcomes and outputs. The objectives of the final

evaluation are to assess: (a) the degree to which the project achieved its objectives; (b) the efficiency of the means used to address these objectives; (c) the factors that, in general, influenced program outcomes; (d) the factors that influenced variations in impacts across participating agencies and ministries; (e) whether unexpected results are due to administrative factors; (f) the sustainability of the project results; and (g) the lessons learned with respect to building social policy analysis capacity. The final evaluation will be contracted once 95% of the resources of the project have been disbursed. This information will be a valuable input for the Project Completion Report.

3.28 The NWC will collect, store and retain all necessary information, indicators and parameters, and participate in the mid-term review, and final evaluation to enable the Bank to prepare the PCR. The NWC has indicated to the Bank its interest to conduct an ex post evaluation two years after the final disbursement of the loan.

IV. BORROWER, GUARANTOR AND EXECUTION AGENCY

4.1 The borrower and executing agency for this proposed investment loan is the NWC and the guarantor will be the GOJ. The NWC as the executing agency would be legally responsible for providing the counterpart funds as well as for debt repayment. The NWC Act authorizes the NWC to undertake loans and also provides it with the right to have the GOJ as guarantor.

4.2 The loan contract will be signed between the Bank and NWC and a guarantee agreement between the GOJ and the Bank. In addition, NWC and the GOJ will sign an agreement or provide other arrangements for the transfer of funds, from the GOJ to NWC, for debt repayment corresponding to the KSA pre-feasibility studies, for the development of the wastewater treatment plant.

A. NWC's organizational structure and modernization plan

4.3 The NWC, with the concurrence of the GOJ, has successfully undertaken a management audit targeted to review its organizational structure and a modernization plan in order improve NWC's service provision. The implementation of the management audit scheduled for a period of 18 months is being successfully carried out and is in its final stage of implementation. The modernization plan that embraces among other aspects the upgrade of key business systems, formalization of work methods, out-sourcing of selected functions is been timely and adequately implemented. During the mid-term review the successful implementation of these tasks will be assessed**.**

a) The organizational structure

4.4 The management audit (commissioned to KPMG in late 2001) included the determination of actual staff numbers, the distribution of employees, and staff-related costs through the analysis payroll data; an employee survey, skills inventory; and a review of operating units. The NWC's staff reduction (500 employees in total) has been carried as scheduled. As of February 2004, approximately 350 employees were made redundant with exit package that include tainting. The new organizational structure[6] has been successfully implemented with the appointment of eight vice-presidents reporting to the President instead of eighteen and with the staffing of the revised technical and administrative positions.

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[6] Under the new corporate structure these are five Vice-Presidents: Corporate & Strategic Planning, Chief Engineer, Finance & Administration, Eastern Division and Western Division; and four areas of support: legal affairs, public relations, internal audit, and business management. Major changes include the elimination of the Vice President for Maintenance, Operations and Quality Assurance Manager positions with the coordination and execution of these activities being undertaken at the Divisional level. With the elimination of the Business Operations Manager's position, the revenue recovery functions will be absorbed into the Finance and Administration Department and the Divisions will be responsible for UFW and the creation of two Regional Divisions each with a Vice President reporting directly to the President.

4.5 The new corporate structure is adequate and responds to the business needs. It provides for a balanced distribution of functions across the different units, defines adequately the function for business planning, project coordination, supervision and control. The organization defines the operational areas following criteria of efficiency related to size of population and area, total output of water and sizes of water supply plants, and total sewage generated and sizes of sewage treatment plants. It also centers the responsibility for the finance and administration functions at the corporate level with the establishment of a treasury and cash management functions and the consolidation of the management of all aspects of the revenue process. These include the billing process as well as control over the monitoring of receivables, the reconciliation of customer accounts and the assessment/collection of outstanding debts. In addition, the monitoring and reporting of projects are independent from the operations function providing tighter monitoring and control of projects from donor agencies like the Bank and JBIC. (The new and old corporate structure can be found in the technical files of RE3/EN3).

b) The modernization plan

4.6 This Modernization plan is being executed as scheduled with the assistance of KPMG. Funding for this plan has been secured with the JBIC loan and would also be secured with this proposed IDB loan. This plan comprises mainly the following four areas: (i) review and upgrade of key business systems (Human Resources, Finance, Inventory, Revenue System and Engineering Systems. Basic Designs for the upgrade of the existing systems), (ii) upgrade of work methods to reduce requirement for overtime and promote overall efficiency improvement including the delivery of manuals of operations and procedures, (iii) out-sourcing of selected functions that are not directly linked to the core function of the NWC such as repairs, operation of motor vehicles laboratory facilities; purchase of materials, etc., (iv) review and upgrade approach to containment of UFW: Two UFW units will be set-up in Kingston/Saint Andrew and Montego Bay (this comprises the execution of the IDB and JBIC investment programs). The project team had the opportunity to review the work executed and warrants the necessity of fostering the implementation of this plan as it is consistent with the revised corporate structure and underscores major areas of the company. **The continuous satisfactory implementation of the modernization plan will be a condition for the execution of the project.**

B. Financial aspects

1. Administrative aspects

4.7 *Financial Management:* The NWC's financial accounting systems, budgeting and its reporting are adequate, secure, and reliable. They provide the necessary information to facilitate the monitoring and financial decision-making and allow for transactions to be processed in a timely manner. The modernization plan will

further enhance the financial management system by providing a line transfer of information from the commercial area and the operations areas.

4.8 *External Audit:* The external auditor is an independent accounting firm acceptable to the Bank. During the last five years the audited financial statements have been unqualified and included no exceptions.

4.9 *Internal Auditing:* The Internal Audit Unit's scope of review, staffing, planning and execution of its activities is adequate. Internal Audit develops a three-year plan that is reviewed on a yearly basis. This unit provides a monthly report to its advisory board, which is composed of an appointed group of Board of Commissioners. The structure and activities are considered adequate; however, the project team recommends doubling the number of surprise audits in a three-year period and including, in the commercial area, inventory management and payroll.

2. Financial situation

4.10 The NWC's financial sustainability has relied mainly in two sources of funds (i) the existing tariff structure; and (ii) annual government transfers (grants). As of March 2003 tariff did not provide for the recovery of capital costs, therefore, NWC relied on Government transfers to finance capital expenditure as well as to pay its financial obligations. Although this mechanism has enabled NWC to break-even on its operations, it did not provide the financial flows for adequate asset maintenance or the financing of the required expansion.

4.11 **Income statement** *Operation revenues:* The main sources of operating revenue are Water consumption 71%, Sewerage collection 18% and Service charges and others 11%. *Operating Costs.* Salaries, wages and administrative expenses account for approximately 67% of the total cost. There has been a significant increase in 2002 as a result of the end of a hiring freeze negotiated with the unions that lasted until 2001. Operation and maintenance accounts for the remaining 33% of the Operating Cost out of which the electricity cost is approximately 20%.

4.12 *Earning Before Interest Taxes, Depreciation and Amortization (EBITDA;* NWC's net earnings in real terms has been affected by both a decrease in the operating revenues and an increase in operating costs. In 2001 EBITDA was able to cover approximately 30% of the capital expenditure. The EBITDA margin has decreased from 7.2% to 1.6% between the years of 2001 and 2003. As a result, NWC has been able to cover neither depreciation nor interest payments and shows operating losses during the last two years.

4.13 *Government Grants:* NWC relies on Government financing to cover its capital costs. Grants form the GOJ during the last two years have covered the existing capital expenditure and debt repayment. **The GOJ will limit future transfers to NWC for environmental (wastewater treatment plants) and social projects**

(communities in the fourth quartile of the Jamaican Poverty Map) as per contractual conditions.

4.14 **Cash flow statement:** Capital expenditure has been financed mostly with government transfers (US$122 million) over the last three years. Debt financing for NWC has been provided mostly from local commercial banks with the government's guarantee at an average interest rate of approximately 11%, with a

Table – 4.1
NWC Historical Financial Statements

Income Statement ($, million)	Audited	Audited	Audited
Year ending, March 31	**2001**	**2002**	**2003**
Water	60.2	57.9	53.4
Sewerage	14.0	12.0	13.1
Service charge & Others	8.8	8.6	8.3
PAM	20.7	22.7	27.4
Operating Revenue	**103.7**	**101.3**	**102.2**
Growth rate	*-6.6%*	*-2.4%*	*1.0%*
Salaries and wages	41.9	47.1	44.6
Repairs and maintenance	13.7	13.8	13.5
Electricity	20.3	18.5	20.3
Administration & Others	20.2	23.2	22.6
Operating Expense	**96.2**	**102.6**	**101.0**
Growth rate	*2.7%*	*6.7%*	*-1.6%*
EBITDA	**7.5**	**(1.4)**	**1.6**
EBITDA Margin	*7.2%*	*-1.3%*	*1.6%*
- Depreciation & Amortization	5.4	10.1	8.7
- Interest payments	1.0	4.8	3.5
Operating loss	**1.1**	**(16.3)**	**(10.6)**
+ Transfers	12.1	57.5	53.3
Net Income	**13.2**	**41.2**	**42.7**

Cash Flow ($, million)	Audited	Audited	Audited
Year ending, March 31	**2001**	**2002**	**2003**
Cash from operations	18.6	52.4	52.2
Working capital	4.0	(11.0)	6.2
Cash before CAPEX	**22.6**	**41.4**	**58.4**
Capital expenditure	(23.4)	(95.2)	(24.6)
Cash before financing	**(0.9)**	**(53.9)**	**33.8**
Financing	8.9	43.1	(23.1)
Net cash flow	**8.1**	**(10.8)**	**10.7**
Beginning cash balance	3.0	11.1	0.3
Ending cash balance	**11.1**	**0.3**	**10.9**

Balance Sheet ($, million)	Audited	Audited	Draft
Year ending, March 31	**2001**	**2002**	**2003**
Current assets	55.8	46.7	60.3
Fixed assets	134.9	211.6	210.1
Total Assets	**190.7**	**258.3**	**270.4**
Current liabilities	44.7	32.9	32.8
Long-term liabilities	3.1	44.8	23.6
Total liabilities	**47.8**	**77.6**	**56.5**
Equity	142.9	180.7	213.9
Total Equity and Liabilities	**190.68**	**258.32**	**270.38**

12-year average maturity and one year grace period.

4.15 **Balance sheet:** Capital grants financing capital expenditure results in an equity hold of 80% of the total assets. Liabilities although commercially sourced, are government guaranteed.

4.16 NWC commercial area has shown improvement. Today approximately 71% of the clientele is metered and their consumption is read on a monthly basis. The accounts' receivable balance is approximately US$24 million, which includes a gross accounts receivable of approximately US$66 million and a bad debt provision of US$42 million.

V. VIABILITY AND RISKS

A. Institutional and legal

5.1 The NWC is a public sector entity established under the National Water Commission Act as a body corporate with perpetual succession and with power to acquire, hold and dispose of property, to enter into contracts, to sue and be sued in its said name and to do all things necessary for the purposes of the Act. The NWC has been granted specific authority under the NWC Act to, with the consent of the Minister, borrow money in such manner and subject to such conditions as he may think fit to impose, as well as to issue stock, debentures or other securities. The NWC Act also grants sufficient authority to the Minister responsible for finance to guarantee, with the approval of the House of Representatives, the repayment of the principal and the payment of interest and charges on any authorized borrowings of the NWC.

5.2 The borrower, the NWC, was formally established in 1980 through the amalgamation of the Kingston & St. Andrew Water Commission and the rurally focused National Water Authority (NWA). This amalgamation resulted in the merging of some major systems island-wide under one Authority. A nine-member Board of Commissioners appointed by the portfolio minister heads the NWC. Together they establish policy and give general direction to the organization. Operationally, a president who is assisted by vice presidents heads the NWC. The NWC's mission is: to efficiently provide and distribute potable water, safely collect, treat and dispose of wastewater at the lowest possible cost consistent with long-term viability; provide a reliable supply of water, at affordable costs to all customers; and maintain good conditions of employment.

5.3 The NWC is a company institutionally viable as its corporate governance, executive management, corporate planning, organizational structure and operating management warrants its long-term sustainability. The current corporate governance structure has provided NWC sufficient autonomy to implement important reforms expected to result in the improvement of the service delivery. The executive management has enjoyed stability and is technically qualified to carry on the day-to-day operation of the company efficiently. The new corporate structure and the modernization will foster NWC's institutional viability. The NWC current structure has clearly defined the functions and responsibilities of the different areas ensuring an adequate level of efficiency. The corporate division in charge of planning along with NWC upper management, over the last two years, has successfully developed a corporate business plan, conducted the modernization program, carried a Tariff Review, and NWC's asset revaluation. The NWC has demonstrated the technical capacity necessary to carry out such important initiatives that are expected to have a positive impact in NWC's long-term sustainability. Additionally, the NWC has been able to coordinate the preparation the Bank and the JBIC projects.

B. Technical

5.4 The project is technically feasible and amply justified from the technical standpoint, since it responds to the needs of a highly populated urban area that currently receive service that is deficient in continuity, pressure and water quality. The project also responds to the need to solve public health and environmental pollution problems caused by the malfunctioning of sewage collection and treatment systems.

5.5 The studies and final designs of the projects have been prepared in accordance with national standards in force that coincide with generally-accepted engineering principles. The designs correspond to technically feasible minimum-cost alternatives.

5.6 The NWC, assisted by ad-hoc consultancies, has the technical capacity and experience to contract and supervise the works. There are enough domestic and foreign companies to execute the works and supply local or imported materials and equipment. The NWC will also have adequate financial resources to operate and maintain the works to be financed under the program, once they are built.

5.7 The execution schedule has taken account of the nature of the works, the bid processing periods and the lessons learned during execution of similar projects in other countries.

C. Economic feasibility

5.8 An economic analysis was performed for the rehabilitation of the potable water supply system for the KSA component[7]. For the sewerage and the wastewater treatment plant a pre-feasibility study will be carried out with resources of the program to finance an action plan to develop a wastewater treatment plant at Soapberry.

5.9 For the purpose of economic analysis, the potable water system component was separated in two sub components. The first one includes water production infrastructure or the rehabilitation of the treatment plants. The second is the distribution network and the rehabilitation and the leakage reduction subcomponent. The objective of this last subcomponent is to reduce physical water losses.

5.10 **Rehabilitation of the treatment plants**: The rehabilitation of water treatment plants is required in order to produce quality potable water. In the absence of this rehabilitation the quality of the water distributed to KSA will be seriously compromised. Today most of the water treatment plants do not comply with the local or international standards. The least cost solution is to rehabilitate the plants at a cost of US$6 millions. The incremental cost per cubic meter is US$0.036

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[7] Bank files contain the full details of the economic analysis.

(including O and M incremental cost), which is lower than the willingness to pay for the consumption of the marginal cubic meter (US$1), showing the economic viability of this component.

5.11 **Reduction of leakage:** An analysis was conducted on the following aspects: i) water supply-demand balance, ii) analysis of alternatives, and iii) cost benefit analysis of the component. This project component is economically feasible and it is needed due to the probability of shortage during the dry season (7 months during the year). The analysis was based on the current tariff structure and the results show that this component is economically feasible. A sensitivity analysis was performed on the tariff and similar results are expected. The amount required for the leakage reduction component has been estimated with the existing information. As soon as the zoning part of this component is completed, a more accurate estimate of the cost of the investment for leakage reduction could be made.

5.12 An amount of US$16.5 million has been allocated for the leakage reduction component. The optimal level of investment required for the leakage reduction component will be known once the zoning is completed; this task is schedule to be carried out before the leakage reduction program. In addition, the execution has been planned is such a way that the zoning program and the commercial loss reduction program will be implemented simultaneously. The additional income due to the commercial loss reduction program has been estimated at US$3 million annually or a present value of US$30 million.

5.13 Supply-Demand Balance: The net current average production capability (subtracting physical loses) is 182 Thousand Cubic Meters per Day (Tcmd) during the wet months and 118 Tcmd during the dry months. The current demand is 129 Tcmd and will increase in year 2025 to 161 Tcmd. This means that the current NWC production capabilities are adequate under wet season demand throughout year 2025. However, available production capacity under dry season condition is already inadequate more than 50% of the time. Therefore, a project or a non-structural solution to increase supply or reduce demand should be implemented immediately.

5.14 Analysis of alternatives: To correct the dry season imbalance, three alternatives were studied: i) a desalination plant plus an increase in the provision of raw water transferred from Rio Cobre basin, ii) a reduction of physical losses, and iii) a seasonal tariff to reduce demand during dry periods.

5.15 The cost of the first alternative would be US$30 millions plus US$0.7 per m3 (operation cost) for an increase of water supply of 32 Tcmd; this would result in a cost of $1.64 per m3 considering incremental cost of investment, operation and maintenance. The cost of the second alternative would be US$16.5 millions for an increase of 22.2 Tcmd, which would result in a cost of $ 0.24 per m3. The seasonal tariff alternative would imply to increase it in US$0.16 per m3 to reduce

the shortage. This policy would imply a reduction on welfare to consumers of US$33.5 million using a demand elasticity of -0.3.

5.16 In conclusion the reduction of physical losses is the best alternative because it has an incremental cost per m3 lower than the first alternative and an economic cost lower than the third alternative.

5.17 Cost Benefit Analysis: The project will reduce leakage in an estimated 22.2 Tcmd. The benefits of this reduction will arise from three main sources: (i) additional amounts of water being made available to consumers during the dry season**, (**ii) a reduction in operating cost for the NWC who would no longer have to treat and pump as much water in order to satisfy the same consumer demand during wet season, and (iii) additional amounts of water available for irrigation in the Rio Cobre Basin (environmental benefit).

5.18 Additional amounts of water being made available to consumers during the dry season was valued as the willingness to pay to increase water availability at a tariff of US$0.67 per m3 which is the marginal tariff to residential consumers. SIMOP was used to make the simulation and calculations of such benefits. The present value of this benefit using a discount rate of 12% is US$12.5 million.

5.19 Reduction in operating cost occurs during wet season consists of energy and chemicals to pump and make the water potable. The present value of this savings is US$1.7 million. The environmental benefit is valued as the opportunity cost for irrigation and is equal to US$0.7 million in present value. The costs included in the analysis were: (i) incremental capital investment costs, and (ii) incremental recurrent costs (operations and maintenance). All transfers including taxes and subsidies are excluded from the analysis. The present value of the cost is US$11.7 million.

5.20 **Results.** The economic internal rate of return of the leakage reduction component is 15.6% and the economic net present value is US$3.0 million using a discount rate of 12%. A series of sensitivity test was carried out using varying inputs such as cost and benefits given different levels of consumption. Using Monte Carlo simulation[8] the results show that the economic viability of the project is robust. Even under unfavorable conditions where cost are 10% higher and the price elasticity is -0.25 the rate of return is 13%. The probability that the project is unfeasible is less than 3% (95% confidence intervals on the net present value are between US$11,300 and US$8,100,000).

[8] Crystal Ball 2000. Excel software to perform risk and sensitivity analysis using Monte Carlo Simulation.

Cost Recovery

5.21 **Tariffs:** The new tariff approved recently by OUR, establishes a general increase of 26.36%. For residential consumers the service charge is US$3.17 and the rates are US$0.40 per cubic meter for the first 14 m3 of monthly consumption and US$0.7 to US$1.55 for 15 to 91 m3. Commercial and industrial rates are homogeneous (US$1.49 per m3). The sewerage charge is equal to the water charge and is intended to cover the collection and treatment systems where available. Operation and maintenance cost of sold water (without depreciation) is US$0.82 per m3. The long run incremental cost (LRIC) is US$0.93 per m3 according to a study done by PWC. The NWC tariff structure has a price adjustment mechanism (PAM) that is applied to all rates and charges monthly to account for inflation, mainly electricity price changes, and exchange rate variations.

Impact on Low Income Groups and Subsidies.

5.22 There is a cross subsidy from commercial and industrial consumption to residential consumption (residential consumption lower than 41 m3/month is subsidized and 98%of the residential consumers consume less than this amount). There is no targeting of subsidies. To correct this, NWC presented a request to OUR to change the tariff structure. OUR denied the request. During the next two years NWC will update this study to target the subsidy to the fourth quartile of the population and will present a new request to OUR. If OUR does not approve the new request, NWC will take alternative measures to insure the targeting of subsidies. **The loan contract will include a condition reflecting this action.**

5.23 There is another type of subsidy for about 85,000 families (mostly rural) that fetch water from standpipes. This water is free and is about 480,000 m3 per month, equivalent to US$430,000 per month. **These standpipes will be metered and the value of the used water will be paid by the GOJ. This is a contractual condition.**

5.24 The social tariff (volume of water up to 14m3 per month) was designed taking into account the average income of the 10% poorest families and their ability to pay. Most of these families have the capacity to pay although a small percentage (less than 5%), who are unemployed, could not pay.

D. Financial feasibility

5.25 The NWC's financial analysis indicates that the company has the financial capacity to comply with local counterpart funding during project execution; and that operating revenues are sufficient to cover operation, maintenance and administrative expenses (including depreciation) as well as all debt obligations derived from financial liabilities. This analysis has been based on a 20-year financial model. The main assumptions and a complete set of projections can be found at the technical files of RE3/EN3. It is important to note that GOJ will not

have to contribute the local counterpart, which is partially secured with other sources of financing.

5.26 Financial sustainability has been an objective pursued by NWC over the last three year. However, as of December 2003 NWC's tariff structure was only sufficient to cover operation and maintenance costs. The financing and payment of all capital cost were serviced by the GOJ. Therefore, in order to change this situation, NWC with the assistance of PWC underwent a major review of its tariff level and structure, along with a revaluation of fixed assets. In addition, NWC conducted a management audit and developed a modernization plan with the assistance of KPMG. The NWC's main goal was long-term self-sustainability with an efficient cost structure. This implied operating cost reductions, accurate valuation of fixed assets, and more importantly the ability have a tariff such that operating revenues can be sufficient to cover all operation and maintenance expenses and the financing of capital work and investments. The combination of the two consultancies resulted in a proposal for a tariff increase to the OUR. As indicated before, the OUR final resolution granted a 26.36% increase effective January 1, 2004. **The continued implementation of the new tariff approved by OUR is a condition to the loan contract.**

5.27 This revised tariff would enable NWC to be self-sustainable in the long-term and cover operation and maintenance costs and the financing of future capital works.

1. Income Statement

5.28 **Operating Revenues:** NWC main source of operating revenues are water sales (72%) and sewerage collection (16%). During the first five years, operating revenue is expected to grow from $127.5 million to $136.5 million, at an annual average rate of 1.3%. The largest portion of income growth, resulting from the 26.36% tariff increase, is captured in the base year[9]. Over time improvements in the billing system will offset the price elasticity effect by increasing the number of customers and will improve the billing and metering system. During the first five years it is expected that NWC will increase its billed customer base by approximately 29,000 connections at an average consumption of approximately 19m3. Some of these new connections currently are (i) non-active accounts, (ii) illegal connections, or (iii) non-metered connections with inadequate metering.

5.29 **Operation and maintenance expenses** O&M expenses are expected to decrease from $102.6 million to $88.4 million during the first five years at an annual average rate of 2.9%. This reduction is mainly the result of the modernization plan and the reduction of bad debts. Salaries, wages, administrative and other expenses show a 20% reduction during the first two-years of projection. Refurbishments of the pumping system should result in electricity costs reductions, however, given the increasing electricity rates, this item has been kept

[9] Income increases from US$103.7 million to US$127.5 million considering that due to the effect of price elasticity consumption would be reduced by approximately 5.2%.

at the same level with a small increase. Likewise, repairs and maintenance show an increase; this expense is projected to remain at the increased level in order to foster the maintenance of the facilities some of which will be rehabilitated with this and the JBIC projects. There is also a cost increase in the line of corporate projects and extraordinary expenses during the first year; these comprise the implementation of the modernization plan (redundancy costs, computers systems, manuals of procedures, and others).

5.30 **Net operating revenue and Depreciation:** The combination of revenue growth and operation and maintenance expenses reduction are translated into a steady EBITDA growth from $24.8 million to $48.0 during the first five years. EBITDA margin starts at the 3.3% and 19.5% level during 2004 and 2005 respectively and builds up to the 35.2% range by the end of the fifth year and remains at that level thereafter.

Income Statement (US$, 000)	**Budget**	**Projected**				
Year ending, March 31	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
	0	**1**	**2**	**3**	**4**	**5**
Water	75,506.7	91,070.5	89,680.7	93,860.1	95,703.9	99,036.1
Wastewater	16,045.7	20,271.0	19,965.3	20,598.3	20,889.8	21,636.3
Service Charge	9,191.1	12,450.9	12,385.8	12,135.4	11,771.8	11,871.9
Other income	3,022.3	3,713.8	3,661.0	3,797.8	3,851.0	3,976.3
Net Revenues	**103,765.8**	**127,506.2**	**125,692.7**	**130,391.7**	**132,216.5**	**136,520.7**
Growth rate %	*19.4%*	*22.9%*	*-1.4%*	*3.7%*	*1.4%*	*3.3%*
Salaries and wages	44,048.0	38,321.7	35,238.4	34,449.2	34,793.6	35,141.6
Electricity	22,801.2	23,257.2	23,489.8	23,724.7	23,961.9	24,201.5
Repairs & maintenance	11,940.0	13,730.9	13,868.3	14,006.9	14,147.0	14,288.5
Administration	10,449.1	8,359.3	8,442.9	8,527.3	8,612.6	8,698.7
Bad debts	6,989.3	5,242.0	3,494.7	3,529.6	3,564.9	3,600.6
Corporate Projects	-	7,464.0	5,456.3	1,672.3	1,672.3	1,542.3
Others	1,164.0	931.2	940.5	949.9	959.4	969.0
Extraordinary	3,000.0	5,333.3	-	-	-	-
Operation and Maintenance	**100,391.5**	**102,639.7**	**90,930.8**	**86,859.9**	**87,711.8**	**88,442.2**
Growth rate %	*16.24%*	*2.24%*	*-11.41%*	*-4.48%*	*0.98%*	*0.83%*
EBITDA	**3,374.3**	**24,866.5**	**34,761.9**	**43,531.8**	**44,504.7**	**48,078.5**
EBITDA Margin	*3.3%*	*19.5%*	*27.7%*	*33.4%*	*33.7%*	*35.2%*
- Depreciation & Amortization	16,052.6	27,036.3	28,534.8	29,913.3	31,442.0	32,853.1
- Financial interests	2,112.3	1,085.6	2,805.6	2,593.6	3,174.7	5,191.0
- Other expenses	2,272.9	325.7	342.0	359.1	377.0	395.9
+/- Grants	2,770.1	-	-	-	-	-
Net Income (Loss)	**(14,293.3)**	**(3,581.1)**	**3,079.5**	**10,665.8**	**9,510.9**	**9,638.5**

5.31 The company's operating revenue is sufficient to cover depreciations cost after the second year. However, it is important to note that the asset revaluation increased the level of depreciations by more than 50% when compared to historical data (US$8.7 million). The NWC has a 4.4% average return on assets and the NWC is net income positive except in the first year of projections. **The contract will include a clause in which NWC's commits at having operating revenues sufficient to cover operation, maintenance, administrative expenses and depreciation.**

5.32 **Net Income and Financial expenses and taxes:** NWC's financing, mostly derived from multilateral agencies, will secure financing for the infrastructure rehabilitation with a minimum of four years of grace period. This will enable NWC to reduce its financial expenses during the first four yeas of loan execution. The NWC is exempt from paying taxes by the powers of the NWC Act.

2. Cash-flow

5.33 **Internal cash generation.** Internal cash generation represents more than 52.1% ($195.7 million) of the total funds and is the result of having a tariff increase such that NWC is able to cover the financing of capital costs. Internal cash generation is 3.2 times sufficient to cover NWC's financial obligations over a five-year period, and net internal cash generation over the same period is sufficient to cover 43.6% of the capital expenditure. **The loan contract will include a condition by which NWC commits to have an Internal Net Cash Generation that is sufficient to cover at least 20% of NWC's capital expenditure plan, starting in the third year of project execution[10].**

Cash Flow (US$, million)							
Year ending, March 31	2004	2005	2006	2007	2008	2009	Total
	0	1	2	3	4	5	2005-2009
EBIT	(12,678.2)	(2,169.8)	6,227.1	13,618.4	13,062.7	15,225.4	**45,963.8**
Depreciation and Amortization	16,052.6	27,036.3	28,534.8	29,913.3	31,442.0	32,853.1	**149,779.7**
Internal Cash Generation	**3,374.3**	**24,866.5**	**34,761.9**	**43,531.8**	**44,504.7**	**48,078.5**	**195,743.4**
Debt drawdowns	6,715.9	71,000.0	46,600.0	18,300.0	28,431.5	23,878.7	**188,210.2**
Grants and others	2,282.6	-	-	-	-	-	**-**
Working Capital	4,808.9	(2,516.9)	(3,963.5)	(395.6)	(589.2)	(824.5)	**(8,289.6)**
External financing	**13,807.4**	**68,483.1**	**42,636.5**	**17,904.4**	**27,842.3**	**23,054.3**	**179,920.7**
Total Sources	**17,181.7**	**93,349.6**	**77,398.5**	**61,436.2**	**72,347.0**	**71,132.8**	**375,664.1**
Debt amortizations	-	12,717.5	14,050.8	4,050.8	4,050.8	7,431.7	**42,301.6**
Financial interests and others	4,385.2	1,411.3	3,147.6	2,952.7	3,551.8	5,586.9	**16,650.2**
Debt Service	**4,385.2**	**14,128.8**	**17,198.4**	**7,003.5**	**7,602.6**	**13,018.6**	**58,951.8**
Water	19,532.0	65,041.8	51,946.8	47,884.8	58,449.8	41,079.8	**264,403.2**
Sewerage	1,430.0	5,430.0	6,930.0	5,930.0	3,930.0	17,530.0	**39,750.0**
Corporate	1,546.3	3,400.5	1,901.2	1,826.2	1,424.4	1,087.0	**9,639.3**
Capital Expenditure	**22,508.3**	**73,872.3**	**60,778.1**	**55,641.0**	**63,804.2**	**59,696.9**	**313,792.4**
Total Uses	**26,893.5**	**88,001.1**	**77,976.5**	**62,644.5**	**71,406.8**	**72,715.5**	**372,744.2**
End of period Cash Flow	(9,711.8)	5,348.6	(578.0)	(1,208.2)	940.2	(1,582.7)	**2,919.9**
Ending Cash Flow	**3,429.9**	**8,778.4**	**8,200.4**	**6,992.2**	**7,932.4**	**6,349.7**	**6,349.7**
Internal Cash Generation		24,866.5	34,761.9	43,531.8	44,504.7	48,078.5	195,743.4
Debt Service		14,128.8	17,198.4	7,003.5	7,602.6	13,018.6	58,951.8
DSCR		**1.76**	**2.02**	**6.22**	**5.85**	**3.69**	**3.32**
Net Internal Cash Generation		10,737.7	17,563.6	36,528.3	36,902.1	35,059.9	136,791.7
Capital Expenditure		73,872.3	60,778.1	55,641.0	63,804.2	59,696.9	313,792.4
Capex Coverage		**14.5%**	**28.9%**	**65.7%**	**57.8%**	**58.7%**	**43.6%**

5.34 **External funding:** External funding is mostly drawn from multilateral agencies such as the EIB, the JBIC and the Bank. Funding has been secured from local banks to finance: redundancies and severance pay as well as expenses associated with pension liabilities.

5.35 **Debt repayment:** During the first five years only 15.8% of the total funds is allocated to debt repayments. Initially debt repayments were to local banks from which the financing for pension liabilities payment as well as for implementation of the modernization plan were.

5.36 **Capital expenditure program:** Approximately 80% of the multilateral funding will be allocated to the capital expenditure program. This is mostly for network rehabilitation, and reduction of water losses. Additional funds are also devoted to works in sewerage and corporate plans such as the implementation of the modernization plan as core projects.

[10] Net Internal Cash Generation is internal cash generation minus debt amortization (principal and interest).

E. Balance sheet

5.37 Balance Sheet projections show an adequate level of liquidity in which current assets are sufficient to cover, on average, 1.6 times current liabilities over the first five years. The NWC is able to keep an average of $7.6 million in cash in banks and a level of accounts receivable with a 60-day average collection.

5.38 The level of the NWC's indebtedness almost doubles form 11.4% level to 33.7%. This is the result of NWC being responsible of meeting its financial obligations instead of having the Government of Jamaica as the borrower. Likewise the level of debt to total assets grows from 21.3% to 40.4%.

F. Environmental and Social Feasibility

5.39 The CESI, in the meeting of September 05, 2003 (CESI 32-03), required the project team to perform an Environmental Analysis (EA) for the operation that was carried out as requested. CESI approved the project report and the EA in its session of March 19, 2004.The project team reviewed the strategic implication of the operation as a catalyst for the clean up of the Kingston Harbour and extended the analysis to include the review of the alternatives for wastewater treatment and final disposal considering ocean outfall to be implemented in the future.

5.40 The results of the EA indicated that the net environmental benefits of the rehabilitation of the water and sewerage systems, and the sewage treatment proposals will be very significant in terms of general sanitation conditions, public health and visual amenity. The rehabilitation of the sewerage collection system is to proceed with the implementation of a Sewage Treatment Plant (STP) to treat the city's wastewater and therefore to improvements to the coastal marine environment, since a significant percentage of critical nutrients contributing to eutrophication will be removed reducing total pollution loads to the Inner Harbour. The economic analysis of the operation included a survey and estimated the economic cost of diseases associated with the lack of adequate water supply and sanitation. The results of the respective surveys have been disaggregated by gender, age, education, and economic situation of the citizen. The rehabilitation of the sewerage and water distribution system might generates savings of 4% on the yearly expenditures within the health facilities and avoid 6,187 man/days/year losses from the work force in the KSA. These numbers are related to the control of five diseases: gastroenteritis, typhoid, hepatitis B, leptospirosis and shigellosis.

5.41 The predicted negative impacts of the present operation are those related to the rehabilitation of the water and sewerage systems which are localized, short lived and easily managed through sound engineering and constructions practices. To complement the National Environmental and Planning Agency (NEPA) guidelines in order to minimize construction impacts, specific orientations identified during the EA, will be added. These impacts and respective mitigation measures will be annexed to the construction contracts and include: (a) Traffic disruption. Limit length of open trenches, schedule work to avoid peak traffic

times, provide notice of road closures, clearly mark alternative routes and maintain access to private and public buildings. Daily monitoring of: complaints and accident records, and random checks of driver behavior; (b) Sewers and water pipeline through private property. Public consultation, early arrangements for easements and compensation; (c) Noise and vibration. Schedule noisy activities, traffic routing, enforce speed limits, vehicle maintenance, and barriers. Daily monitoring of complaints and working hours; (d)Air quality, dust. Douse dry surfaces, provide wheel cleaners, cover vehicles, enforce speed limits, avoid or cover stockpiles. Daily monitoring of complaints;(e) Structural damage to important buildings. Shallow trenching, avoid use of high-impact machinery in sensitive locations, control backfilling. Existing status survey of sensitive buildings. Monitor sensitive buildings during and post construction as follows: before works commence and twice per year (wet and dry season) for five years; (f) Loss of vegetation. Reinstate on completion of works, plan route to avoid tree or mangrove loss, replant tree species. Monitor planted vegetation, especially trees, bi-weekly for two years; (g) Contaminant spills/run-off. Containment, good handling practices, ensure emergency procedures are in place. Daily visual checks and regular inspection of handling practices and storage facilities; (h) Spoil and waste. Dispose to controlled landfill. Random checks of driver behavior; (i) Exposure of contaminated soil or groundwater during trenching. Remove to controlled disposal site. Soil or water sampling and analysis and random checks of the trenching progress; (j) Archaeological or historical remains. Inform relevant authority before and during works. Inspections as required by relevant officer from Jamaica National Heritage Trust and other agencies;and (k) Impact on commercial activities. Consultation, maintain access, schedule works. Monitor complaints on a daily basis.

5.42 During the dry season, an increase of approximately 1.6% in the volume of untreated wastewater disposed at the Harbour area is expected as an outcome of the system rehabilitation. This potential deterioration in the Harbour environment for approximately six years will be offset by the long-term benefits of the construction of the STP. The results of the EA and the technical studies produced the following: (i) a review of potential wastewater treatment alternatives, which concluded that the least cost solution is the construction of a series of Waste Stabilization Ponds (WSP) at Soapberry; (ii) an assessment of the ecological status of the proposed marine sites for the disposal of treated wastewater represents the baseline for future impact analysis; (iii) an analysis of alternatives for marine disposal of treated wastewater; (iv) and the TOR to perform a full EIA for the WSP system at Soapberry. The assessment of the marine disposal sites and the subsequent study of disposal alternatives also generated the need and the TOR to develop a three dimensional hydrodynamic and dispersion model and detailed monitoring program for the Harbour area.

5.43 The monitoring programme for the collection of oceanographic field data will extend over a period of one year to eighteen months. The results will be used to calibrate the three-dimensional hydrodynamic and effluent dispersion model. The programme will include the following elements: (i) current measurements; (ii)

drogue tracking; (iii) bathymetric survey; and (iv) water quality and biological monitoring.

5.44 The Program's budget includes US$250,000 to develop, calibrate and run the three dimensional hydrodynamic and dispersion model and US$100,000 to conduct the EIA for the STP system at Soapberry according to the prepared TORs and following the Bank's policies for Disclosure of Information (OP-102) and Resettlement (OP-710) and US$100,000 to implement the monitoring program. These actions contribute to the environmental and social feasibility of the future project of the STP at Soapberry. The PIU will include an environmental specialist on its staff who will be responsible for project supervision.

G. Social equity and poverty reduction classification

5.45 The project does not specify explicit performance indicators to measure poverty reduction and social equity enhancement.

H. Risks and mitigating aspects

5.46 The project has risks that were mitigated during project preparation and will be mitigated during project execution. These risks are at the political level, resulting from sector reform risks, private sector participation risks and tariff and subsidy implementation schedule related risks; risks at the corporate level are from institutional culture and implementation of NWC's modernization plan. To mitigate these risks, the project team addressed them through project preparation and the analysis of the operation. Following is a summary of the specific risks and the main factors that help mitigate them.

1. Water and sanitation sector reform

5.47 The GOJ is committed to continue with the water sector modernization. Legal reform is ongoing and has the necessary components for the development of a healthy sector. Enactment of the WSSA is pending, as well as the new or recast NWC Act. Nevertheless, the GOJ and NWC are already following the new policy and are implementing the sector reforms accordingly, thereby applying the fundamental elements of the new legislation. There is always some risk of backtracking on policy reforms at the level of Parliament. However, the Cabinet has already approved the instructions to the Chief Parlamentary Counsel for the new WSSA. The GOJ expects that the WSSA Act will be approved during calendar year 2004. This Act will consolidate the sector and NWC reforms and should prevent backtracking on the sector reforms by future governments. In addition, the project team has concluded that NWC has been provided with sufficient autonomy to be run as a commercially focus company.

2. Private Sector Participation (PSP)

5.48 While the GOJ and NWC have taken a decision not to divest NWC, there are a number of steps to involve PSP in water and sewerage services. Collections,

metering and fleet outsourcing should not meet with much resistance, even though some rationalization of staff would be required. More aggressive PSP, such as a BOT for the Soapberry Treatment Plant (STP) or an integral concession of a particular geographical area of services, could encounter some resistance from within NWC and its customers. The project will finance a plan to build, finance and operate the STP. A next step towards the completion of such plan may require some aggressive PSP. The plan financed by the project, therefore, will include not only the financial and technical viability of the project, but also consultations with stakeholder to determine the political will to carry such project with PSP.

3. Tariffs structure

5.49 There is a risk that clients may react negatively to the new tariff increase and future changes of the tariff structure requested by the Bank. There are a number of factors to mitigate this risk. In the first place, clients have faced tariff increases over the past years, based on the K-factor and the price adjustment mechanism (PAM). Second, as part of the PricewaterhouseCoopers (PWC) study to support the tariff request to OUR, an analysis of the willingness and ability to pay was done that justifies the tariff increase. Finally, as part of the approval process of the tariff increase the NWC had to conduct a series of public meetings all over the country to inform and explain the situation. The OUR approved the latest tariff increase based on the results of these meetings and studies conducted. The change of tariff structure will follow a similar process.

4. Cultural challenges and implementation capacity

5.50 The implementation of the proposed operation will assist NWC with its modernization plan that will support the efficiency gains required for the long-term sustainability of the Company. The implementation of the modernization plan entails, among other things, a change in the management culture of NWC so as to no longer conduct "business as usual". This is a long-term process in which the Project will support the initial steps in most of these areas, as described in the project components. In April 2003, NWC's Board approved the modernization plan and jointly with the management, is committed to its execution.

5.51 Accordingly, as of November 2003, NWC already started the reengineering of NWC, changing the corporate structure and responsibilities in a drastic manner. In addition, over 350 labor contracts have been terminated of the 500 redundant positions identified as part of the studies for the modernization of NWC. The process of reengineering continues as well as the staff reductions and it is expected that these will be completed by the end of 2004. Cultural changes would be a challenge to the capacity to NWC's Board and administration to implement the reforms. However, KPMG and NWC, as part of preparing the studies for the modernization of NWC, engaged both the upper and middle management of the Company and latter on the unions and the workers in discussions about the importance of the modernization of the Company and the required needs and challenges to change the corporate culture.

KINGSTON WATER AND SANITATION PROJECT
(JA-0114)
Logical Framework

OBJECTIVES	INDICATORS[1]-[2]	MEANS OF VERIFICATION	ASSUMPTIONS
A. GOAL			
1. Contribute the improvement of the quality of life of the Kingston population by improving the reliability of potable water supply and sanitations services. .	a. Pressure raging from 20 to 35 psi at any point of the KSA network by mid term review. b. Water consumption from NWC in KSA increased from 97 to 129 MLD by the end of the program c. Restoration of the service after emergency lock-off in a maximum of 24 hours in urban areas and 48 in rural areas by mid term review.	NWC report to the regulator (http://www.our.gov.ja)	
B. PURPOSE			
Efficiency 1.1 Improve the quality of the services provided to the Kingston and Saint Andrew Area and increase the efficiency of NWC.	a. The O& M cost of delivering water to meet demand reduced from US$0.87/m3 to US$0.72 by 2008. b. Average collection to billing ratio increased from 85% to 86% 87%, 88%, and 89%". c. Employee cost as a percentage of revenues reduce from 44% to 41%, 38%, 35% and 32%. d. Meters account read increased from 71% to 72%, 75%, 80%, and 85%. e. Maximum of 3 months between meter reading by 2005. f. Number of billing complaints no more than 5% of bills printed by 2005 g. EBITDA margin from -14% of capital expenditure to not less than 20%, 25%, 30% and 35%	a. NWC report to the regulator and NWC annual report to IDB. b. See item a. c. See item a. d. See item a. e. See item a. f. See item a. g. See item a.	a. Continues commitment of GOJA with sector and NWC reforms and Success on the reorganization of NWC program. b. Reasanable electricity prices.

[1] Some indicators come from the OUR standards which can be modified accordingly, this indicators could be adjusted for consistency.
[2] The Goals indicators are expected benefits from the project.

OBJECTIVES	INDICATORS[1-2]	MEANS OF VERIFICATION	ASSUMPTIONS
	h. Net internal cash generation from of capital expenditure to not less than – 20%, 5%, 10%, 15% and 20%	h. See item a.	
	i. Major aspects of NWC's Reorganization and Modenization, restructuring and downsizing completed by implemented by 2006	I. See item a.	
	j. UFW reduced from 61% to 55% by mid term review and 45% by the end of the program.	j. NWC annual report to IDB.	
	k. Transfers from GOJA limited to special projects (environmental and poverty reduction projects) by mid term review	k. See item a.	
Quality of service improved			
1.1 Improve the quality of the services provided to the Kingston and Saint Andrew Area and increase the efficiency of NWC.	a. Impurities in the potable water within standards as specified by MOH by mid term review.	a. NWC report to the regulator and NWC annual report to IDB	
	b. Sewerage plan of action for urban KSA approved and ready for execution by end 2005.	b. See item a.	
	c. Compliance with IJAM water quality standards by 2008.	c. See item a.	
C. OUTPUTS			
1. Component 1: Reorganization and Modernization of NWC Completed.	a. Major aspects of Modernization (staffing, GIS, MIS and re-engineering) of NWC completed by mid term review[3]	a. NWC annual report to IDB.	a. Employees of NWC concurred with the modernization of the company.
	b. NWC Corporatization by mid term review[4]	b. See item 1.1	b. Employees and Management of NWC start a process of cultural change in terms of efficiency and commercial focus of NWC.

[3] Mid term review: 50% of the resources committed or two years from loan eligibility
[4] See ¶ 3.18 (Loan Proposal)

OBJECTIVES	INDICATORS[1-2]	MEANS OF VERIFICATION	ASSUMPTIONS
	c. At least 100 employees trained by mid term review In: maintenance, operation, budgeting, accounting, corporate planning, human resources Management, and tariff modeling.	c. See item 1.1	c. There is interest in the private sector to participate in contract of reduction of UFW.
	d. Private sector participation Studies completed by 2007	d. See item 1.1	d. Costumers accept increase in tariff structure.
	e. Data collection and benchmark plan for compliance and monitoring completed within 12 months of eligibility	e. See item 1.1	
	f. Tariff structure approved by the OUR implemented or alternatives measures to reduce subsidies.	f. OUR resolution	f. A study has been executed
2. Component 2:Rehabilitation of the potable water supply for KSA completed.	a. Reduction of UFW 1 firm hired and working by end 2004	a. NWC annual report to IDB.	a. Demand projections are within current estimates
	b. Source water production 9 meters installed in (areas) and functioning by end 2004	b. See item 2.1	b. The UFW reduced to estimated levels.
	c. Pipelines and leaking mechanical equipment (34,5 km) replaced by 2008	c. See item 2.1	
	d. DMA's and pressure zones defined by end 2004	d. See item 2.1	
	e. Number of customers in KSA with meters increase from 70% to 72%, 75%, 80% and 85% annually during execution.	e. See item 2.1	
3. Component 3: Sewage collection system rehabilitated.	a. Nanse Pen and Darling Street pumping station rehabilitated by 2008	a. NWC annual report to IDB.	a. Action plan to collect and treat sewage in KSA approved by the stakeholders.
	b. Action plan to collect and treat sewage in KSA prepared by 2006.	b. See item 3.1	

KINGSTON WATER AND SANITATION PROGRAM
(JA-0114)

Tentative Procurement Schedule

MAIN PROGRAM'S ACQUISITIONS	LOTS	FINANCING %		METHOD	COST (US$ THOUSAND)	BID ANNOUNCEMENT (SEMESTER/YEAR)
		IDB	LOCAL			
A. Civil Works						
1. Leakage Reduction	1	100		ICB	15,000	II / 2005
2. Mains Replacement	1	100		ICB	2,000	I/ 2006
3. Development of Distribution Zones	1	100		ICB	4,000	I / 2005
4. Water Supply System Rehabilitation	2	100		ICB	10,000	I / 2006
5. Sewerage Inspection and Cleaning	1	100		NBP	500	I / 2007
6. Rehabilitation of Sewage Pumping Stations and Mains	1	100		ICB	5,000	I / 2006
B. Goods						
1. Bulk Meters	1	100		ICB	330	II / 2005
2. Micro Meters	1	100		ICB	2,000	II / 2005
C. Consulting Services						
1. Soapberry Wastewater Treatment Plant Site Investigation	1	100		NBP	150	I / 2007
2. Technical Assistance for Equipment Procurement	1	100		ICB	500	I / 2005
3. Independent Financial Auditors	1	100		ICB	500	I / 2005
4. Tariff Study	1	100		ICB	350	I / 2006
5. Preparation of Sewerage Action Plan	1	100		ICB	300	I / 2007
6. Independent Technical Auditors	1	100		ICB	300	I / 2006

ICB International Competitive Bidding
NBP National Bidding Process